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THE office of Inspector of Buildings for the city of New York, left vacant by the resignation of Mr. Esterbrook, has been filled by the appointment of a thoroughly-trained professional architect, Mr. Albert F. D'Oench. Mr. D'Oench, who is personally known to many architects in and about New York, and by name to many more in all parts of the country, is a young man, having been born in St. Louis in 1853. He received the best technical education that his native city could afford, and then crossed the water and entered the Royal Polytechnic School at Stuttgart as a student of engineering and architecture. After completing his course he came to New York, and entered the office of Mr. Leopold Eidlitz, who employed him to supervise the work upon the Capitol at Albany, and gave him also partial charge of other important buildings. On leaving Mr. Eidlitz's office, he entered that of Mr. Richard M. Hunt, and later, that of Mr. Edward E. Raht, for whom he acted as chief assistant until he undertook business for himself, two years ago. It is hardly necessary to remind architects that Messrs. Eidlitz, Hunt and Raht stand at the very head of the profession, as skilful and conscientious masters of the art of construction, and Mr. D'Oench could not have been trained in a better school to fit him for the important duties which will now devolve upon him. We are glad to be able to congratulate the architects and builders of New York that the choice of the Fire Commissioners should have fallen upon so excellent a candidate, and we trust that he will, in the administration of his office, be cordially and effectively supported by all the members of his own profession.

THE commencement of the new Inspector's career augurs well for the future. Hardly had he taken possession of his office, when, as we learn from the New York *Commercial Advertiser*, orders were issued for the immediate construction of brick proscenium-walls in three important theatres, Niblo's Garden, Daly's Theatre, and the Thalia Theatre; and for the erection of fire-escapes on the three street fronts of the Grand Union Hotel in Park Avenue, as well as on the Coleman House, Gilsey House, and St. James Hotel on Broadway, the Windsor Hotel on Fifth Avenue, the Union Square Hotel, and Earle's Hotel on Canal Street. Besides the hotels, various school buildings, including the College of St. Francis Xavier, and one or two public schools, were ordered to be furnished at once with fire-escapes or additional stairways. It is doubtful whether even Mr. Esterbrook ever issued mandates relating to so many important buildings in one day, and Mr. D'Oench will probably find his resolution severely tried before they are all enforced; but if he is determined enough to carry them out, his control over the matters which the law puts in his charge will be for the future undisputed.

WE are indebted to the kindness of Mr. J. M. Bancroft of New York for some interesting information as to the best modes of preventing conflagrations, the sending of which to us was suggested by a recent paragraph in which we mentioned the frightful losses which are annually inflicted upon this country by forest fires. We have before called attention to the fact, insisted upon by all fire engineers and intelligent insurance officials, that a small quantity of water applied during the first moments of a fire is more effective than thousands of gallons poured on when the flames have gained headway. To use the expression of Mr. Woodbury, "the most essential fire apparatus consists of pails of water," or, as he says further, "Twice as many fires are put out by pails as by any other means;" and any one can recall instances where even a quart or two of water, applied at the right moment to a blazing ash-barrel, or a smoking roof or floor, has saved much property, and even life. These facts being familiar to everybody, it is strange that more has not been done to systematize the use of small and simple appliances for putting water on fires, and to provide for having them always available, instead of leaving the good work which they are capable of doing to be performed by chance, or rather, by the improbable meeting at or near the place in danger of a pail filled with water and a man or woman cool enough to apply it effectively to the fire.

AS an indication of the mode in which the service of these homely but powerful methods of saving life and property may be organized into a most useful system, Mr. Bancroft quotes the example of the town of Wakefield, Massachusetts. This town, about which we happen to know a good deal ourselves, covers a large area, and is, moreover, divided nearly through the middle by two large ponds, the length of the two together being nearly two miles. There are several large manufactories in the place, and these, with the population dependent on them, and the school-houses, stores and churches, with the fire-engine-houses, are concentrated in a rather closely-built village near the principal railroad station. To get with a fire-engine from the central village to the outlying parts of the town, particularly to those on the farther side of the ponds, requires a good deal of time, and, as those who live in the rural portions of country towns well know, a fire in these portions generally results in the total destruction of the building attacked. Under these circumstances, as Mr. Bancroft tells us, Mr. Rufus Kendrick, the energetic owner of an estate at the upper end of the town, was inspired with the idea which, with the coöperation of his friends and neighbors, was afterwards carried into effect, of organizing a Home Fire-Protective Association, for the sole purpose of encouraging and enabling the inhabitants of the more distant sections of the town to keep small hand appliances ready for use, and to employ them to the best possible purpose. The apparatus with which the members of this Association are armed consists simply of what is commonly known, although now made by various parties, as the Johnson pump, a double-acting syringe, which is placed in a pail of water and held down by the foot, leaving the hands free to operate the piston and direct the water thrown from the short hose connected with the syringe. The whole affair costs only six dollars and a half at retail, but has the advantage over a simple pail that the stream can be thrown forty or fifty feet horizontally, or twenty-five feet vertically. After furnishing itself with these weapons, the Protective Association adopted a rule by which, to encourage the members in their work, a prize of one dollar is given to the holders of each of the three pumps which first arrive, in condition for service, at the fire. The same reward is offered, for the sake of impartiality, to the regular engine companies, but as the Association pumps are always ready, and need only one person to carry them to the fire, they are almost always there first. At present the Association has fifty pumps scattered through the town, and, with the help of its simple system of rewards, has proved itself the most effective means of preventing fires ever known.

DURING the year 1883, the first year of the existence of the Association, there were nineteen fires in the town, thirteen of which were put out entirely, or so far subdued that regular engines were not used at all, by the members of the Association with their little pails and squirts. Of the remaining six three were put out by the regular engines, and three others had acquired too much headway to be controlled by any means, and resulted in the total destruction of the

buildings in which they occurred. The cost for the year of the pumps, which had put out more than four times as many fires as the large engines, was one-half of one per cent of the expense of the whole fire department during the same period; or to put it as the *Insurance Monitor* does, ten dollars spent on the hand-pumps gave the same result as eight thousand six hundred and sixty-six dollars spent on the engines. This is a sufficiently striking indication of the value of the small-appliance system; but the record of the Association for the next year is far more satisfactory still. The members had probably gained skill by the experience of the previous year, and their number had perhaps increased, for we find that in 1884, although there were twenty-six fires, the hand-pumps arrived first at every one, and put out all but three of them. Thirteen of the fires were in the fields or woods, where the application of a few gallons of water in a stream one-eighth of an inch in diameter might, it would seem, to be of comparatively little use; but so great is the efficiency of a little water, early applied, that all these were controlled. We may say for ourselves that although we knew of the success of this Association, and felt the additional value which its existence conferred on property in Wakefield, it had never occurred to us that so admirable a system was confined to that town. We hope this will not long be the case, and will certainly try to do our part, by calling attention to such of the future exploits of the Association as may come within our knowledge, to encourage any of our readers who may be influential in other communities to emulate its example.

LE GENIE CIVIL contains an interesting article on technical schools for instruction in the various textile industries. The article begins by tracing the movements of trade in woven fabrics, and explaining them, in some cases in a striking manner, by showing the influence of such schools in developing the industries with which they deal. Few persons, probably, not engaged in the trade, comprehend the changes which have taken place within a few years in the manufacture of fine fabrics. Those who studied the exhibits at Philadelphia nine years ago will remember the surprise with which they saw a few silks and velvets, which they had supposed to be a monopoly of the French weavers, marked with German names; but so rapid has been the development of German skill that at this moment the cashmeres, silks, satins, velvets and trimmings of Berlin, Annaberg, Barmen, Crefeld, Mülheim, Elberfeld and Aix-la-Chapelle, although sold to a great extent under French names, practically control the markets of the world. Lyons, with the aid of a new regulation, which permits cotton yarns used in the manufacture of velvets and other fine goods for exportation to be imported free of duty, has recently improved its condition, and sends goods to Germany, but of cheaper materials, such as cotton-velvets, cashmeres and heavy cloths. France itself buys immense quantities from Germany. As an illustration of the way in which this change has been brought about, the example of Crefeld is cited. A few years ago, Crefeld, formerly a flourishing manufacturing town, was on the verge of ruin. Its ancient silk-weaving establishments, surpassed in every respect by those of France, Switzerland and England, could no longer compete with them, and their export trade had disappeared. At this juncture a few thoughtful manufacturers of the town, convinced that something must be done at once, established in their midst a school of weaving. This school has prospered, and its increasing prosperity has been attended with a corresponding revival of the industries of Crefeld, until now the Crefeld goods have to a considerable extent superseded those of Lyons even in France, and are driving the Lyons fabrics out of the New York market. Schools more or less similar to that of Crefeld now exist at Berlin, Munich, Dresden, Stuttgart, Carlsruhe, Aix-la-Chapelle, and many other places in Germany, at Zurich and Winterthur in Switzerland, and in one or two towns in Italy; and the art of spinning, weaving and coloring fabrics, and of selling them to the best advantage, is taught to three or four thousand attentive pupils every year. The course of instruction generally extends over three years, and comprehends all the principal European languages, elementary mathematics and mechanics, commercial geography, and elementary chemistry, with a little political economy and commercial and international law. After the first year, the pupil begins his special studies, giving half his time to actual practice in designing, spinning, weaving and dyeing, and in treating raw materials. The physical character of various fibres is also investigated, analyses are made of samples of cloth, and instruction is given in dressing, finishing and packing goods, in setting up, repairing, and caring for machinery, and in many other details of industrial life. The pupil in these schools has no time for idleness. He is required to spend from nine to ten hours a day in study and practice; and it is not surprising that after three years' tuition a good student acquires knowledge and resources which enable him on graduation to supervise and direct textile manufactures with an effectiveness and economy which are worth many times his salary to his employers.

ACCORDING to the *Scientific American*, a device has been patented by the well known Captain Petersen for increasing the strength and facilitating the management of balloons, by connecting them in long trains. Except the end sections, each member of Captain Petersen's train has a cylindrical gas-holder, with a car so shaped that it can be readily and closely connected with those behind and in front of it, and each car has its separate motor and steering apparatus. Although the weight of material to be lifted by a given bulk of gas would probably be greater with such a construction than with balloons of the ordinary shape, the sectional arrangement offers many advantages. If a section, for instance, is damaged, it can be quickly disconnected, and the remaining portions coupled together, or a new section taken up at one of the stations which it is proposed to establish on the regular balloon routes. So confident is the inventor of the practical value of this device that a company has already been incorporated for carrying it into actual use; and although we are not convinced that such trains will prove to be the most economical or efficient appliances for aërial navigation, we have no doubt that sailing through the air will before long be a common mode of locomotion, and we shall be glad to see any experiments made which may render it, when it comes, safer and more economical.

THE *Metal Worker* mentions some new applications of luminous paint, which are of considerable interest. Considering the cheapness of the materials for making this substance, it is surprising that it has not come more into use. We are not sure whether any patent exists on the paint known as Balmain's, but even if there is one, very effective substitutes can be made from the same materials, sulphur and lime, by processes which were public property forty years ago, and the cost of these compounds would represent but a small fraction of the price demanded for the luminous paint of modern times. Most of our readers probably know something of the application of the paint to match-boxes, key-holes, clock-dials, door-knobs and name-plates, and have perhaps heard, with some incredulity, about the English-railway car painted on the inside with it, which is said to have been so brightly illuminated that the passengers could see to read without other light; but within a short time the application of the paint has been extended to certain portions of harness, fishing-tackle, fire-buckets, lanterns, compasses, and engineers' tapes. The latter, in particular, are said to have been adopted in the British Army for use in laying out fortifications. If a party is detailed to throw up earthworks by night, the engineer officers go first to the spot, and with the luminous tapes measure off the ground, and lay down a shining line around the exact plan of the intended fortification. The working party follows, and finding the ground thus visibly marked out for them, the men simply dig their ditch, and throw up the earth into a breastwork, on the lines formed by the tapes. No lanterns or other lights of any kind are needed, and the entrenchments can be planned and executed without indicating the movements of the party to the enemy. We have an idea that the manufacturers of the paint could, if they wished, greatly extend their market by making the uses and price of their product better known among architects. It is said that they export large quantities for painting doors and door-handles in countries troubled with frequent earthquakes, to satisfy the demand in such places for some means of indicating quickly the way of escape from the bedrooms to the street, in case a shock should be felt at night; and judging from analogy, we should say that the fear of falling down the cellar stairs, which is much more widely diffused among civilized nations than that of being crushed by an earthquake, might, if the mode of alleviating it by painting the walls of the stairway with luminous paint were once pointed out, prove the source of a demand at once extensive and permanent.

STATUES AND MONUMENTS OF LONDON.[1]—IV.

Monument to Lord Chatham, Westminster Abbey. Bacon, Sculptor.

THE next group of monuments dates from the first known of British sculptors, Nicholas Stone. Sir Francis Vere and Sir George Holles were kinsmen and comrades in arms, and they died nearly at the same time. The tomb of Vere, 1606, is of pure Gothic style, the figure recumbent. That of his friend, within a few feet, is in a totally new style; the statue is erect, it is depicted in the costume of a Roman general, it surmounts a monument with allegorical figures. It is a singularly pleasing monument, but unfortunately badly placed in the Abbey, and nearly hidden by the Vere monument. It is the first statue in the Abbey which stands erect, and therefore marks a new era. It was erected by Nicholas Stone in 1626 for Lord Clare, who paid £100 for it. For another of the Holles family, Francis, son of the Earl of Clare, 1626, a figure also erect, which Horace Walpole describes as "of most antique simplicity and beauty." Stone received £50 only; twenty years earlier Stone had erected the beautiful monument with recumbent statues of Sir George Villiers and his wife, 1605, for which he received £560, and five years after the Holles statue he erected the splendid Renaissance monument of Dudley Carleton, 1631, in the earlier style, for which he received £200. These and the tablet to Casaubon, 1614, are the representatives of Stone's work in the Abbey, and excellent all of them are in their different styles, and well worthy of study, as indicating the change that was coming about. There are no more purely classical statues in the Abbey than those of the two Holles. Elsewhere we have of Nicholas Stone, the statue of Sir Julius Cæsar in St. Helen's, Bishopsgate, and the curious figure of Dr. Donne in his winding sheet in St. Paul's, which survived the destruction of the older church.

Nicholas Stone, born 1586, died 1647, was the father of modern English sculpture; after him came Cibber, 1630 to 1700; Bird, 1667 to 1731; Grinling Gibbons, 1683 to 1721; Roubiliac, 1698 to 1762; Rysbrack, 1693 to 1770; Scheemaker, 1680 to 1769; Joseph Wilton, 1722 to 1803; Nollekens, 1737 to 1823; Banks, 1733 to 1805; J. Bacon, 1740 to 1799; Flaxman, 1755 to 1826; Chantrey, 1782 to 1842; Westmacott, 1775 to 1855; Gibson, 1790 to 1866; and Foley, 1818 to 1879; all of whom are represented by their works in the Abbey, many of them by numerous works. The one exception to this is Cibber, of whom there is nothing in the Abbey, and of whose work in sculpture the only examples we have in London are the statues of Melancholy and Madness in the entrance hall of Bethlem Hospital, so famous for their realism — statues referred to in the well-known lines of Pope when speaking of Cibber's son —

> Where o'er the gates by his famed father's hand
> Great Cibber's brazen brainless brothers stand.

From the above list of sculptors it is evident at a glance how much we owed to foreign art, and especially to the school of sculpture in Flanders.

The next in the list to Cibber is Bird, to whom the Abbey owes the great architectural monument in the composition of which he was assisted by the architect Kent, and where the half-recumbent statue of Holles, Duke of Newcastle, is rising from a kind of altar-tomb, while Justice and Prudence are standing by. It is the first of a series of works in which allegorical figures occupy the most prominent position. Indeed, the era from 1650 to 1820 represents in monumental sculpture one in which classical and allegorical figures abound and often overshadow or supplant the subject of the monument. It would be amusing to count the number of Britannias, Neptunes, Victorias, Fames, figures of Justice, Mercy, Eloquence, etc., which are to be found in the Abbey and St. Paul's on monuments during this period. The craze for allegory was carried much farther by Bird's successors. It reached its climax in the great monument by Nollekens to the three captains who were killed in Rodney's victory, Bayne, Blair and Manners, 1782, where a gigantic figure of Neptune is pointing out to Britannia three small medallions, on which the heads of the captains are given in low relief, while Victory from above is holding over them a crown. The subjects of the monument have here disappeared almost wholly, and the immense space is devoted to allegorical figures without interest and with little of beauty. Many other examples of this kind are to be found in the Abbey.

To return to Bird, we have from him the semi-recumbent figure of Dr. Busby, and the semi-recumbent figure of Sir Cloudesley Shovel, 1717, depicted in Roman costume and a wig, a singular mixture, lying in the midst of an architectural structure, and as remote from one's conception of the gallant old admiral as could possibly be.

Of Grinling Gibbons we have but one monument in the Abbey — Mrs. Beaufoy, a charming half-figure supported by two allegorical figures; beyond this we have nothing in London of Gibbons's sculpture, except the two statues already alluded to. The exquisite woodcarving in the choir of St. Paul's was, however, from his chisel.

Of Roubiliac the Abbey has seven monuments, some of world-wide renown. That which appears to me the most pleasing is the monument to Sir Peter Warren, where Hercules has just placed the bust of the admiral on its pedestal, while Navigation, an allegorical personage, is ready to crown it with laurel. The bust of the admiral is excellent, and the female representing Navigation is a charming figure; the monument reminds one of the work of Bernini. The well-known monument to the Duke of Argyll and Greenwich [see Illustrations], where Fame is engaged in inscribing the name of the hero, and Eloquence is addressing the audience, scarcely needs description; it is a marvellous production of art, however little appropriate to a church. The figure of Eloquence has excited the greatest admiration of artists. Canova said of it that it was the noblest statue he had seen in England. The Nightingale monument is equally well known,

The Nightingale Monument, 1758, Westminster Abbey. Roubiliac, Sculptor.

and its terrible realism and splendid execution have made it famous. His statue of Handel in Poet's Corner is not worthy of either sculptor or subject.

Unquestionably the best work we have of Roubiliac is the statue of Sir Isaac Newton in Trinity College, Cambridge. His statue of Shakespeare in the British Museum is also a fine work, but of greatly inferior interest to that of Newton, as a statue of one who has been dead a hundred years must always draw upon the imagination, while in the statue of Newton we feel that we have before us the man himself. At the mature age of fifty Roubiliac visited Rome, and on his return is reported to have said on seeing again his own work in the Abbey, "By God, my own work looks to me as meagre and starved as if made of nothing but tobacco pipes."

Of his successor in popular favor, Rysbrack, the Abbey has at least twelve works, possibly more. Of these, the two principal are those in the places of honor on either side of the entrance to the choir, Sir Isaac Newton [see Illustrations] and Earl Stanhope, two fine compositions where the principal figures are not lost in their allegorical surroundings. There is also the monument to Milton, a charming bust, deficient only in interest from having been modelled seventy years after the death of the poet, a very tardy recognition of so great a man; the monument to Matthew Prior (1721), of which the beautiful bust by Coysevox was given by Louis the Fourteenth; and the monument to Admiral Vernon (1751), of the typical kind, a bust surrounded by allegorical figures.

His contemporary and successor, Scheemaker, is represented in the Abbey by an equal number of works. Most of them are of the allegorical type already alluded to. His Admiral Wager (1743) is the exact pendant to that of Admiral Vernon by Rysbrack, two allegorical figures bending over a bust. The two are placed on either side of the entrance to the north transept. The monuments to Lord Aubrey Beauclerk (1740), who was killed at Carthagena, under Vernon; Admiral Watson (1757); and Mr. H. Chamberlin (1728), the eminent accoucheur of his day, are of the same type — in all the busts are excellent. In the monument to Sir John Balchen (1744), the bust is wanting; the allegorical figures alone are there, and there is a bas-relief depicting an incident in the life of the hero.

The monument to Monk, Duke of Albemarle, 1720, erected fifty

[1] A paper by Mr. G. Shaw Lefevre, reprinted, with added illustrations, from the *Nineteenth Century*. Continued from page 89, No. 478.

years after his death, under the will of his son Christopher, is a more ambitious performance, and of its kind is a striking work. The figure of Monk himself is fine. That of Sheffield, Duke of Buckingham, and his wife, 1721, is of the older type of recumbent figures on an altar-tomb with a sumptuous canopy. The Duke is in Roman armor, his wife in the ladies' dress of the period. The statue of Shakespeare as an imaginative work executed a hundred years after the death of the poet [see Illustrations], and not equal to those of Roubiliac already referred to. The bust of Dryden, died 1700, on a monument long delayed, and erected by Sheffield, Duke of Buckingham, is one of the greatest gems of Poets' Corner. Generally the busts of this sculptor are of the first quality, and there are very few of the numerous busts which have been placed in the Abbey during the last twenty years which could compare favorably with those of Scheemaker.

In Joseph Wilton we find a sculptor of the same school. His principal work is the immense monumental piece in honor of General Wolfe, 1759, in which the wounded General is depicted lying without clothes (in order that the artist, it is said, might show his anatomical knowledge) in the arms of a fully-equipped sergeant, and receiving a wreath from Victory [see Illustrations]. The bronze bas-relief beneath the figures is by Capitsoldi, and is an excellent representation of the landing of the British troops, and the ascent of the Heights of Abraham. The monument is interesting as showing the struggle between the classical and allegorical school, and the more natural school that was soon to supersede it. Nothing can be more real than the figure of the sergeant; on the other hand the figure of Wolfe in seminudity, though real in one sense, is untrue, and the Victory is a survival from the allegorical school. The monument may be compared with West's well-known picture of the same event, in which the figures are given in their soldier's uniform, and where the artist was almost universally blamed at the time for not representing them in Roman costume. In the monument to Admiral Holmes, 1761, the hero is represented as a Roman general with the usual allegorical attendants.

Of Nollekens, considering his great vogue and his long life, during which he amassed a large fortune by his chisel, and executed an enormous multitude of statues and busts, there are comparatively few works in the Abbey. The immense monumental piece to the three captains killed in Rodney's action, already alluded to, where the allegorical devices have reached their climax, and have extinguished the subject matter of the monument, and the medallion of Oliver Goldsmith, 1744, are among these few. He is handed down to memory by Dr. Johnson, who, upon hearing a discussion as to the merits of various sculptors, said, "Well, I think, sir, my friend Nollekens can chop out a head with any one of them." Mr. Pitt declined to sit for his bust to him, but after the death of the statesman the sculptor avenged himself by getting a cast of his face, out of which he realized £15,000. He obtained an order from Trinity College, Cambridge, for a statue at the price of £4,000; he sold seventy-four busts, for which he received a hundred and twenty guineas each, and which were executed for him by some inferior artist for twenty-four guineas each, and he also sold six hundred casts at six pounds apiece.[1]

Probably the worst of all the sculptors of this school and era whose works have found a place in the Abbey was Read, a pupil of Roubiliac, the author of the atrocious monument to Admiral Tyrell, 1766, a prodigious mass of rocks, clouds, sea and ships, where the admiral, who died peacefully on shore, but was buried at sea, is represented as rising to heaven out of the sea. Roubiliac is reported to have said of this monument, "That figure of Read's of Admiral Tyrell going to heaven out of the sea, looks for all the world as if he were hanging from a gallows with a rope round his neck." This monument confirmed the prophecy which the same great artist is said to have made of his pupil when the latter boasted that some day, when out of his articles, the world would see what he could do, "Ven you do de monument," said Roubiliac, "den de varld vill see vot von d—d ting you vill make."[2]

Another contemporary of Nollekens, and of whose works there are many examples in the Abbey and St. Paul's, was John Bacon (1740–1799). No sculptor has ever had a greater number of subjects of the first importance committed to him. The monument to Chatham in the Abbey, that to the same statesman in the Guildhall, Howard the philanthropist, Warren Hastings, Dr. Johnson, what subjects for a sculptor!

The monument to Chatham in the Abbey is excellent work of its kind. The figure of Chatham itself is good, but it is placed too high, and in subordination too much to the gigantic allegorical figures below, which would appear to be the main object of the composition. There is the same fault in the great monument in the Guildhall. The author appears to have outwitted his rivals in obtaining an order for the Chatham monument in the Abbey, for, while the members of the Royal Academy were considering the terms of a competition, he went direct to the King, who said to him "Bacon, Bacon, you shall make Chatham's monument and no one else." The monument was much approved at the time, and is referred to by Cowper in the lines:—

> Bacon there
> Gives more than female beauty to a stone,
> And Chatham's eloquence to marble lips,
> Nor does the chisel occupy alone
> The powers of eloquence, but the styles as much.

There is a story that when Bacon was re-touching the statue in the Abbey, a clerical gentleman, who was a stranger to him, tapped him on the shoulder and said, in allusion to the story of Zeuxis, "Take care what you are doing, you work for eternity." The reverend gentleman then mounted the pulpit, and began to preach. When the sermon was over, Bacon touched his arm and said, "Take care what you do, you work for eternity."[3]

Most people in the present day will prefer Bacon's statues of single figures standing alone without the allegorical accompaniments considered so necessary in those days, such as Howard the philanthropist and Dr. Johnson, both at St. Paul, and very fine examples of his work.

It should here be stated that about this time St. Paul's began to vie with the Abbey for the bodies of the great and their monuments. The first admitted to St. Paul's was Howard, next Sir Joshua Reynolds, and thirdly, Sir William Jones. Dr. Johnson was buried at the Abbey, but his monument was erected in St. Paul's [see Illustrations].

Another contemporary both of Nollekens and Bacon was Banks, of whom men of his own generation formed the highest opinion. Flaxman said of him that "his works had eclipsed the most if not all of his Continental contemporaries." Of his work, we have in the Abbey the monument of Sir Eyre Coote, one of the least attractive of the allegorical monuments in the building, and at St. Paul's there are the monuments of Captain Burgess, killed in the naval battle of Camperdown, and of Captain Westcott, killed at Aboukir; both have the same idea and the same faults. In the former Victory is presenting a sword to the hero, who is represented without clothes. In the latter Victory is supporting the dying hero, who is dressed in a Roman toga. They are unpleasing works, and alone would in no way account for the reputation of this artist among his contemporaries.

Lord Mansfield, Westminster Abbey. Flaxman, Sculptor.

Following the three last-named sculptors at a distance of twenty years, but surviving Nollekens only by three years, was Flaxman (1755–1826), one of the most gifted artists this country has produced; a man possessed of high imaginative qualities and the purest taste, regulated and cultivated by a long study of Greek art. There are several of his works in the Abbey and St. Paul's: the best is the monument to Lord Mansfield, which he produced immediately on his return from Rome, where he had spent seven years. It raised him at once to the highest position among sculptors. Banks said of it, "This little man will cut us all out." The figure of Lord Mansfield is a noble one, simple in its attitude and severe in its look. The two allegorical figures, Wisdom and Justice, do not eclipse the main figure, and are properly subordinated to it. There is also a monument of his in the Abbey to Captain Montague, and an interesting bust of Paoli. His works in St. Paul's are of inferior order. He seems to have been carried away by the fashion for allegory. In the monument to Nelson [see Illustrations], Britannia directs the attention of two young seamen to the figure of the Admiral; in that to Lord Howe, History writes in letters of gold the names of the battles in which he had fought, while Britannia and her lions are at his feet. The figure of Nelson is powerful. The statue of Sir Joshua Reynolds is also excellent, and shows the sculptor at his best.

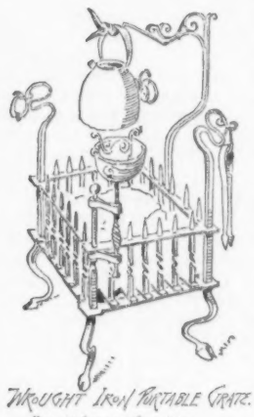
Charles James Fox, Westminster Abbey. Westmacott, Sculptor.

Sir R. Westmacott was the sculptor most in favor after those just

[1] "*Life of Nollekens*," Vol. ii, p. 43.
[2] "*Ibid*," Vol. ii, p. 95.
[3] Allan Cunningham's "*Lives of British Sculptors*," p. 243.

named; born in 1775, he lived till 1855, and contributed a number of works to the Abbey and St. Paul's. In the Abbey are his monuments of Pitt and Fox, near to one another, as are their graves in another part of the Abbey; of Addison, Spencer Perceval and Tierney; and of the Duc de Montpensier; while in St. Paul's are those of Lord Collingwood, Lord Duncan, Sir R. Abercrombie, and others. His three statues of Canning, Duke of Bedford and C. J. Fox have already been alluded to. It cannot be said that in any of these he reached a high level. His monumental works have all the defects of the dying school of abstract personification and allegorical groups, while his single statues are ponderous and without expression. The monument of Fox in the Abbey is specially ill-conceived. Fox is represented half-recumbent and half-naked. The monument to Spencer Perceval is one of the most awkward and unpleasing in the Abbey. With Westmacott we reach the close of the allegorical group: whether the public was surfeited of them or whether the artists felt unable to invent any fresh combination of them, or whether the growth of better taste rejected such designs, we find that they came to a timely end.

TO AUVERGNE — CLERMONT.[1]



WROUGHT IRON PORTABLE GRATE.

WE are at last in Auvergne and in its capital, in the city which looks up at the hills which once were as Etna has been from the beginning of recorded history, as Vesuvius has been from the days of Titus. And one thought cannot help suggesting itself. When Spartacus and his band found shelter in the crater of Vesuvius, no man looked for an outburst of flame from Vesuvius any more than we now look for an outburst of flame from the Puy de Dôme. Yet Vesuvius was but a quenched furnace, a furnace which was to be kindled again. Can we conceive that some day Clermont may be as Catania or even as Pompeii? Anyhow we look on that wonderful land where every height, from the mighty Dôme almost to the smallest hillock, bears signs of once having sent forth its pillars of cloud and pillars of flame. Straight in front, as we look westward, rises the Dôme itself, where Mercury may well have been fancied as lighting on the heaven-kissing hill that was crowned with his own temple. To the south, like a greater Tor of Glastonbury, rises Mont Rognon, crowned with the shattered castle of the Arvernian Dolphins, and beside it, like Uleybury on the edge of Cotswold, the long natural castle of Gergovia, where baffled Julius left his sword in the hands of the Arvernian warriors of an elder day. To the north stretches far away the great plain of Limagne, like a vaster Sedgmoor at the foot of loftier Mendips and Quantocks. On the whole, there is much in the scenery of Auvergne to suggest the scenery of Somerset and Gloucestershire; the ranges, the bluffs, the hills, great and small. Sometimes, when we come on heaps of primeval cinders, our thoughts might rather leap to the other side of Severn and the Severn sea. There are parts of Auvergne and Velay where we seem to be threading our way through a Dowlaif ready made by the hand of Nature.

But our present business is with the city which is the head of the Arvernian land. We at once mark its present name as belonging to quite another class from either of the accustomed types of Gaulish names. It does not, like Tolosa and Rothomagus, keep its original name as a city. It does not, like Andegavi and Lemovicæ, keep the name of the tribe which has supplanted the name of its own town. Nor does it bear the name of an emperor, either alone like Constantia and Aurelianum, or finished with a Gaulish ending like Augustodunum, or a Greek ending like Gratianopolis. Clermont, *Clarus Mons*, belongs to a class of names, sometimes picturesque, sometimes pious, which seem to have come into vogue in the eleventh and twelfth centuries. The *Belli montes*, the *Montes fortes*, the *Clari montes* are not rare. So we have *Clari Vallis*, *Casa Dei*, and even such names as *Caritas Virginitas*, *Eleemosyna*. The Normans brought the taste to England — witness our Richmonds, our Beaulieus, our Beaudeserts, and the whole tribe of Cistercian *valleys*. But the names of this kind most commonly used belong to castles or monasteries or to the small towns that have grown up around them. The capital of Auvergne, with its long history, must stand almost alone among ruling cities in bearing a name of this class. But here, too, it is comparatively modern. The capital of Auvergne is perhaps most illustrious for the presence of two renowned inhabitants and one renowned visitor. It is the dwelling-place of Sidonius; the birth-place of Gregory of Tours; the preaching-place of Urban the Second. Now Urban undoubtedly preached at Clermont, but Sidonius was assuredly not known to any man of his own day as Bishop of Clermont. The city ran through the ordinary course of Gaulish nomenclature, and ended with a special finish of its own. It has never been Gergovia any more than Autun ever was Bibracte. Roman taste or Roman policy, possibly the memory of Roman defeat, gave the Arvernian land, like the Æduan land, another capital which could not show the spoils of Cæsar in its temples. The Arvernian town of Nemetum became, as Augustonemetum, a new head of the tribe. Augustonemetum, according to the usual law, became *Arverni, civitas Arvernorum*. By that style it was the bishopric of Sidonius Apollinaris. Then came the fancy name of *Clarus Mons*, the Clermont from which the mighty call went forth to which in those days mens' hearts and swords could answer. Lastly, the bright mounts have become so many that Clermont in Auvergne has come to need a badge to distinguish it from lesser Clermonts in the land of Beauvais and elsewhere. Clermont, with its appendage of Montferrand, Clermont, head of the department of Puy de Môut, is officially known as *Clermont Ferrand*.

Is Clermont to rank as one of the hill cities? Looking down from the height of Mercury, we are inclined to say, No; we think otherwise during the early part of the road thither. Yet, if the *clarus mons* from which the city takes its later name means the hill on which the city itself stands, we do not wonder that modern French writers have cut down the *mont* into a *monticule*. It may be that Master Wade would not have known — save haply by guessing — what was meant by *monticule;* he might have been better pleased to call it a *tertre*, a word which we have actually found lurking in some of the cities of Northern Gaul. But Clermont does stand on a real hill, a real isolated hill, a hill which no one would despise if it stood either in the land of Chartres or in the land of Ely.

We must not, however, measure its practical height by its scientific height above the sea. We believe that the scientific height of the *monticule* is somewhere about twelve hundred feet, a very respectable height in most parts either of Gaul or Britain. But the whole soil of Auvergne is so high that these twelve hundred feet do make only a *monticule*. And we must remember this fact in estimating much greater heights. The Puy de Dôme is scientifically a good many feet higher than Snowdon; practically it is almost as much lower. Clermont stands a good deal higher above the sea than Lincoln or Durham: but it is not at all a hill city in the sense that they are hill cities; still a hill city it certainly is. There is a considerable ascent from its lowest parts to the highest quarter, which is crowned by the cathedral church. From the open space near that church we may distinctly look down on the lower ground, the ground where we may suppose that men gathered to hear the preaching of Urban, and to listen to the decrees of that great assembly. Still, in such a land as that in which Clermont stands, we certainly look up far more than we look down. We had no Rognon and Puy de Dôme soaring above us at Angiers and Poitiers.

And if Clermont is but in a secondary way a hill city, it is still less of a river city. The Allier, which stands out conspicuously enough in an old view of 1570, seems to have vanished along with the others shown there which are no longer to be seen — the walls, the king and queen's palace, northeast of the cathedral, the abbey of Saint Allyre beyond the walls and the river, and other objects which later havoc has swept away. The stream flows or did flow between the prefecture — once the Cordeliers — and the Place de Jaude, as well as by the treasure of Clermont, the church of Notre Dame du Port. Its course indeed gave the city an approach to the peninsular shape. But we hardly feel that there is a river; it seems almost to have gone the way of London's Fleet and Bristol's Frome. Altogether the city, as a city, apart from its position, its memories, and two or three special buildings, is less interesting than some others. There are some good houses, especially on the way from the cathedral to Notre Dame du Port, but nothing to compare with Poitiers or Limoges. And both houses and churches on the Bright Mount have somewhat of a sombre hue, built as they are of the lava of the neighboring volcanoes, though lava less dull in tint than that of Catania.

On a spot which has such a history as that of the city of the Arverni, we naturally ask whether there are any buildings or other objects left which can have been looked upon either by Urban or by Sidonius? Is anything standing to remind us of the days of the preaching of the Crusade, anything to remind us of the days when the Goth showed himself so good a ruler of his Roman realm? The most instructive building in Clermont, the type of Arvernian Romanesque, the — to a stranger, at least — wonderful church of Notre Dame du Port, may well carry us back to the days of Urban, some parts of it, perhaps, to days earlier still. But there is nothing of an ecclesiastical kind, and not much of any kind to carry us back to the days of Sidonius; there is nothing, for instance, like the baptistery at Poitiers. It is said that not long ago a piece of sculpture of Roman date was to be seen against a house near the cathedral. Nothing of the kind is to be seen now; but there are signs that some houses have been lately pulled down, so most likely it has perished with them. And both in the cathedral itself and in another church, otherwise of no importance, just outside the town, ancient sarcophagi are used for altars. But of buildings within the city of Roman or Early Romanesque date, it is not easy to find anything above ground. But in the suburbs we may, if we look for it, light on one fragment on which the most famous Bishop of the Arvernians may have looked, and which may possibly have been counted among his own belongings. It lies near one of the most frequented parts of the city, and yet it is hard to find. Joanne's guide-book speaks of a piece of Roman wall which he calls *Muraille des Sarrasins*, and which his description led us to think would be a marked object on the way from Clermont to Chamalières, the way to the Puy de

[1] By Dr. E. A. Freeman, in the *Guardian*.

Dôme. Nothing of the kind, however, could we see, nor could any one tell us where this Saracen wall was. But the local writer, Bouillet, spoke of a Roman wall at a place which he called Château des Salles, which seemed to be the same as Joanne's Saracen wall. The Château des Salles was found with very little trouble, with the help of a guide, though the chances are that we might never have lighted on it for ourselves. It is clearly the building meant by Joanne, though it does not stand out by the side of any road, but has to be looked for among courts and alleys leading out of the Place de Jaude at the west end of the town. We cannot help thinking that Joanne confounded its name with that of a fragment in the village of Chamalières. There, there is a Place des Sarrasins, and on one side of it rises a wall which looks like one side of a square keep, and which seems to be part of a castle of the Dolphins of Auvergne. The Château des Salles is partly much later, partly much earlier, than the days of the Dolphins. A good house of the fifteenth century, with one of the characteristic staircase-turrets in the court-yard, has attached to it a large piece of wall, of that kind of construction, alternate layers of stone and brick, which is the common rule in the Roman remains of Gaul and Britain, but of which no distinct example is to be seen in Rome itself. What distinguishes this wall at Clermont from other walls of the same kind elsewhere is a series of attached half-columns, round which the layers of stone and brick are carried. They remind one somewhat of the half-columns of brick in the *Amphitheatrum Castrense*, but they are stouter; they have lost their capitals, and they must be some centuries later. The brickwork of the amphitheatre at Rome is of the earlier days of the Empire, and forms one of the buildings which Aurelian found it convenient to work into the circuit of his wall. This at Clermont can hardly be before the fourth century, and it may be later. It is said that the house to which it is attached belonged to the Bishops of Clermont; and if there is any ground for thinking that it belonged to them in early times, and if anybody chooses to fancy it a work of Sidonius himself, we cannot prove that it is not. We need hardly say that, standing even now in a suburb, it lay far beyond the Roman wall of Nemetum, and formed part of some suburban building, a villa, most likely, of some wealthy citizen, if we cannot assign it to the Bishop himself.

This piece of wall, then, and the sarcophagi, are really all the Roman work, Christian or pagan, which the traveller will find for himself in the city that was Augustonemetum. In the proper home of Sidonius, in the head church of his bishopric, we find as little to suggest his presence, or that of Urban, as we find in the church of Poitiers — in the church itself — to suggest the presence of Hilary. The cathedral church of Clermont is not even an Arvernian church at all. Just like that of Limoges, it is an exotic, though a very beautiful exotic. A characteristic example of French Gothic, we admire it simply as a work of art. It has not, like the older church of Notre Dame du Port, any special propriety in the city in which it happens to stand. Built on Arvernian soil, it is purely French, and it might just as well have stood on any other spot of the wide space which came within the range of French dominion and French taste. Historically it proves nothing, except the fact that when it was built French artistic taste had thoroughly established itself in Auvergne. The church is typically French, and brings out most of the points in which a French minster differs from an English one. In other words, it is short and lofty, with western towers, but no central. It does not at all belong to the first rank of French churches in point of scale, either in length or height. In England it would come very low down indeed in point of length, while in point of height it would rank, we imagine, third in all England. Here is a church, perhaps of the length of Tewkesbury, rising higher in the air than any minster in England except Westminster and York. We need hardly say that it has the apse and surrounding chapels; it will surprise no one to hear that it was designed for six towers, and that none of the six marks the crossing of the four limbs. Nor will it surprise any one to hear that, of these six towers, five, and among them the two chief ones, remain unfinished to this day. All this means simply that it is distinctly and thoroughly French, and to say of a minster of this date that it is distinctly and thoroughly French is to say that it has an internal effect of its own kind, with which no English minster can compare. France is — we are speaking of Gothic churches only — as distinctly the land of perfect internal effects as England and Normandy are the lands of perfect external outlines. Clermont Cathedral has a better effect at a distance than it has when we come near. The short and lofty body, with its two western towers, looks well from most points. The spires, as we have already implied, are still unfinished, and oddly enough, the scaffolding which still surrounds them gives them, at a little distance, something of the effect of tapering towers like those of Tours and Orleans. In the distance the transepts are lost, and when we come near, they certainly are no improvement within or without. It is very difficult to treat a transept on the French plan where there is no mid-tower. Within, the church is of extreme beauty. We can sit and gaze with delight; but when we come to criticise, it is hardly so satisfactory as the admirable building at Limoges. The two are so near in style and scale that a comparison between them is easy and fair. At Clermont the triforium is not so skilfully managed as at Limoges. There is a kind of canopy over the arches, which seems out of place, and the transepts do not strike as a special feature in the way that they do at Limoges. There they have a character; here we simply think that they are wide and shallow, put there mainly for the purpose of building towers against them which have never been finished. We are tempted to wish them altogether away, as at Bourges. Yet Clermont cathedral is, inside at least, a graceful and lovely building, only it is not what we came to see in Auvergne. What we did come to see is to be found in the other great surviving church of Clermont, the collegiate church of Notre Dame du Port. But that, the model in some sort of Arvernian art, must be taken in its own place along with its fellows, as a study of a most marked form of local art — one which, we can have little doubt in saying, is far more instructive and far more attractive than that which we lately studied in Anjou.

THE WASHINGTON MONUMENT.

Brookline, Mass., February 17, 1885.

THE completion of the Washington monument by the setting of the last stone at the apex in December, 1884, was an event of no small significance. There were many engineering features in connection with the erection of the obelisk which challenge attention. One of the principal difficulties was with the foundation, the portion of a structure about which an engineer is particularly solicitous. The top of the monument as it now stands is 555 feet above its base, which, exclusive of its concrete foundation is about 55 feet square. The total cost has been something over $1,100,000, a considerable amount to expend on so small a horizontal section, if that alone be considered.

The old Washington Monument Association had erected between the years 1848 and 1856, 156 feet of the obelisk, and for twenty years nothing more was done upon the structure. In 1877, the whole property was turned over to the United States. Plans were at once made by Colonel Casey of the Corps of Engineers for completing the work, and the undertaking from that time to the present has been pushed with comparative enterprise, and certainly with no little skill. The original height designed by Robert Mills was 600 feet, but on careful examination of the foundations it was found by the engineers in charge that there was not sufficient area of base to give a confident assurance of stability. The question then arose as to whether it would be better to underpin the structure, or to build a massive wall enclosing the earth about and under the base, so as to reduce to a minimum the chances of lateral displacement of the particles when subjected to the enormous weight of the entire projected masonry. The plan of underpinning was finally adopted, and this was principally carried out by the liberal use of concrete extending under and around the old foundations. The original depth of only eight feet was increased to thirty-six feet, partly by raising the level of the earth surface so as to cover the concrete buttresses, and partly by lowering the new foundation. This portion of the work was successfully completed in 1880, and then the work of carrying up the super-structure was vigorously pushed.

The weight of the obelisk at this time was about 31,000 tons. In the process of underpinning, nearly half of the old rubble-work had to be torn away, which was of course done in sections, and forty-eight per cent of the area of the shaft was undermined. The new foundation is 126 feet square, and covers 16,000 square feet against 6,400 square feet of the original plan. The walls of the obelisk are about fifteen feet in thickness at the lower levels, and they taper to one and one-half feet at the top. The exterior is composed of white marble, from a quarry in Maryland, and the backing is of gneiss and granite. The shaft is 34½ feet square at the top, and the pyramidion which surmounts the walls is 55 feet in height. The planning of this apex involved the expenditure of no small amount of thought and skill. At first it was intended to roof over the top with a frame-work of iron, with glass to light the well in the centre, but as finally built this portion of the obelisk consists of a series of twelve light arched buttresses of marble on the inside which spring from a point in the walls 85 feet below the apex. These buttresses support slabs of marble on the outside which form a smooth covering, and give an appearance of solidity from the exterior. In reality the covering stones are but seven inches in thickness.

Above the point 452 feet from the base, the veneering of marble runs through the walls to the well. The latter contains an elevator and staircase.

It may be of interest to compare the height of the Washington monument with the highest structures in the world. From Haswell we take the following table: —

HEIGHTS OF TOWERS, ETC.

Pyramid of Cheops	520 feet.
St. Peter's	518 "
Cologne	501 "
Balbec	500 "
Strasbourg	486 "

It will thus be seen that the Washington obelisk outranks all the rest.

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HELIOTYPE PRINTING CO. BOSTON.

No. 479 American Architect and Building News Feb. 28 1885

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London Monuments and Statues. No. 4.

Lord Palmerston. Westminster Abbey. Jackson, Sculptor.

The Fire Monument. Sir Christopher Wren Archt.

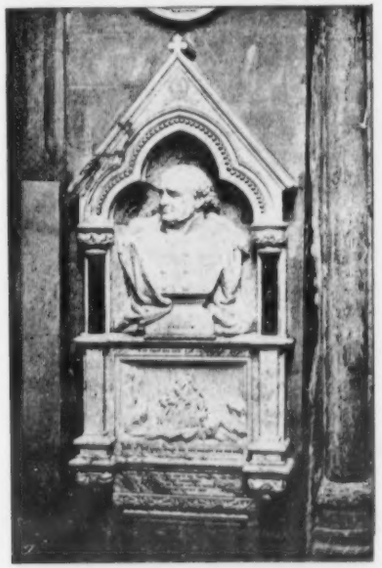
Eleanor Cross. Charing Cross. Restored by E.M. Barry Architect.

Monument to Cornwallis. St. Paul's Cathedral. Rossi, Sculptor.

The Poets Corner. Westminster Abbey.
Campbell, Marshall, Sc. Shakespeare, Scheemakers Sculpt.

Trafalgar Sq. Statue of Charles I. Le Sueur, Sculpt.

West Front. St. Paul's Cathedral.
Statue of Queen Anne in Foreground. Bird Sculpt.



Sir John Franklin Westminster Abbey.
Noble, Sculptor.

Photo Gelatine Phototype Printing Co. Boston.

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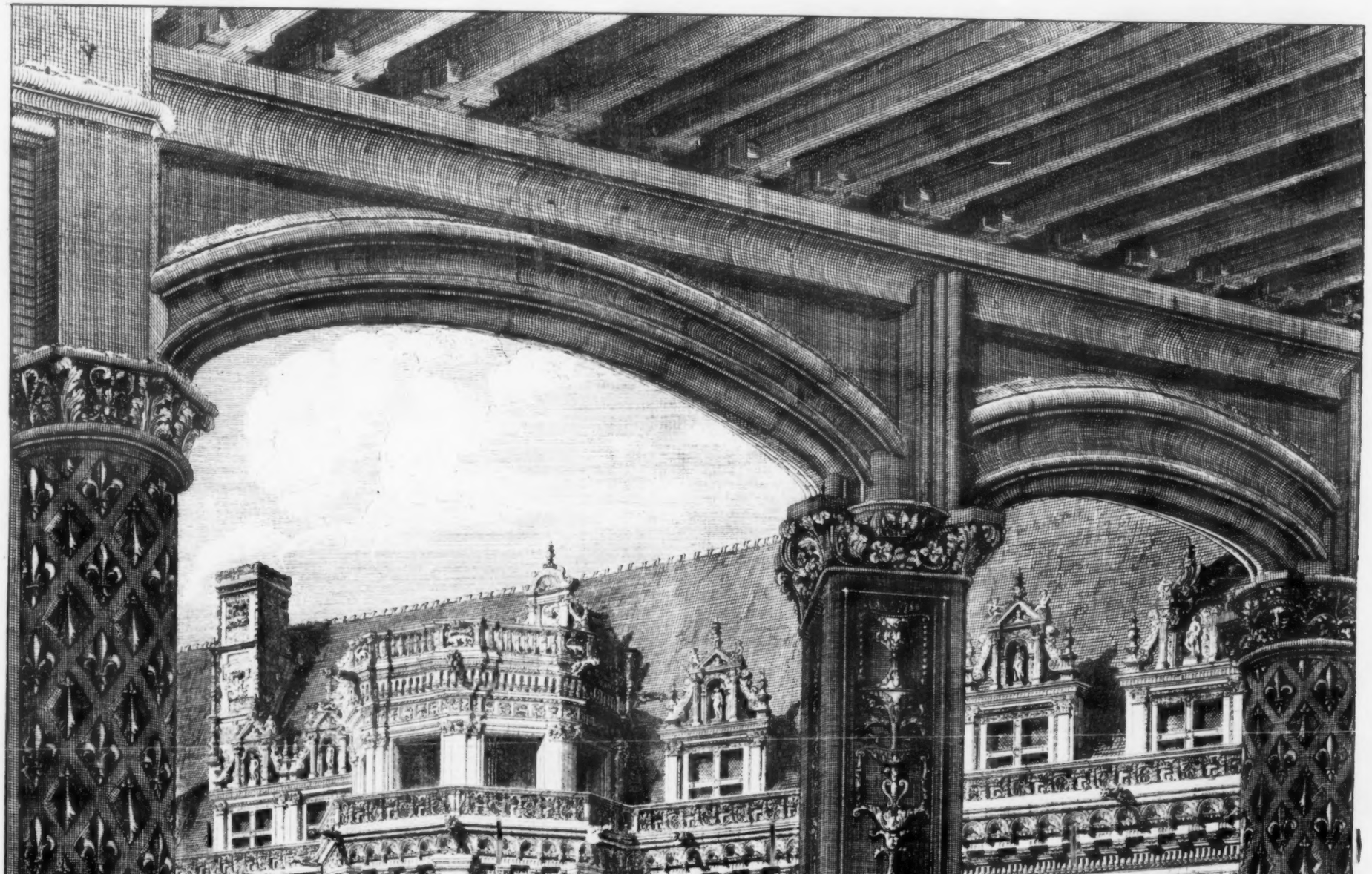

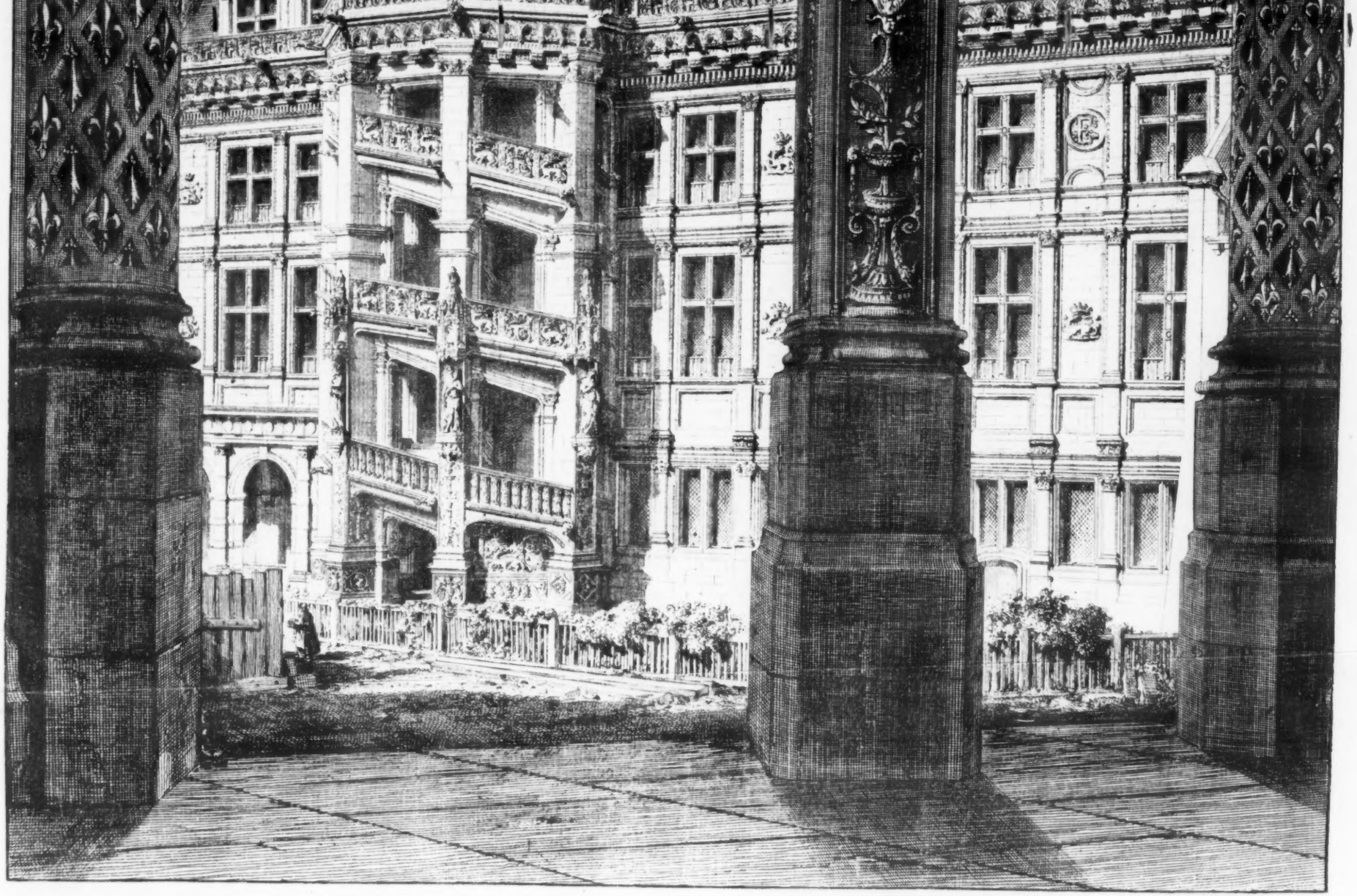

HELIOTYPE PRINTING CO. BOSTON

GRAND STAIRCASE OF FRANCIS I. CHATEAU DE BLOIS.

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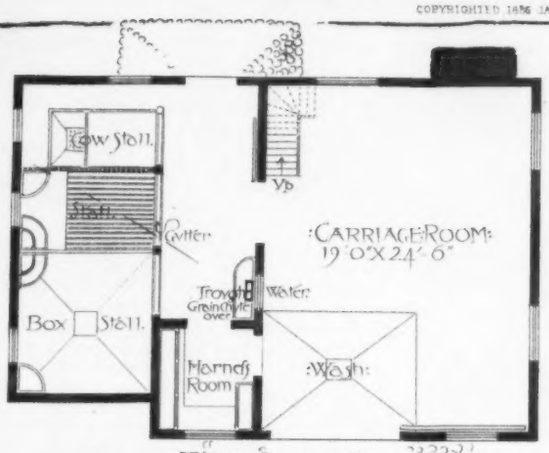
COPYRIGHTED 1885 JAMES R. OSGOOD & CO.

AMERICAN ARCHITECT COMPETITION:

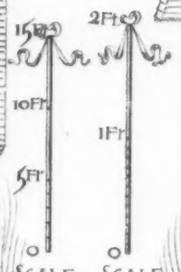
STABLE OF MODERATE COST:

SUBMITTED BY "SR ROGER:"



FIRST STORY PLAN

SECOND STORY PLAN



SCALE OF PLANS AND ELEVATIONS

SCALE OF DETAILS

REAR ELEVATION

END ELEVATION

HELIOTYPE PRINTING CO. BOST.

The present total weight of the obelisk with foundations and earth resting thereon is 81,000 tons. The weight of the shaft alone is about half this amount. With a strong wind blowing against one side, it it estimated that the final pressure on the earth under the foundation nowhere exceeds nine tons per square foot. During the work of underpinning the settlement was about two inches, and the total settlement has been about four inches since the work of rebuilding began, which may be considered a most satisfactory condition of affairs. An account of the settlement at each of the four corners of the monument was kept as the work proceeded, and the maximum difference was about one-sixteenth of an inch. By careful calculation and manipulation it is possible to handle as large masses as this towering weight of 81,000 tons with success, but such work can be trusted only to those whose experience and accomplishments fit them for the work. While there may be in the minds of many a question as to the propriety of expending so large an amount of money on a structure, which has in its design so little artistic merit; still we think no one will question the propriety of completing the obelisk after it had once been begun. As it existed in 1876, the Washington monument simply commemorated the undertaking of "too big a job;" as it stands today, it is as well a monument to the skill and enterprise of the American people, as to the nobility of the name which it perpetuates.

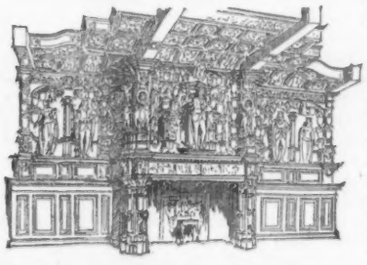
DESMOND FITZGERALD, M. Am. Soc. C. E.

THE ILLUSTRATIONS.

[*Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.*]

CHIMNEY-PIECE IN THE COUNCIL-CHAMBER OF THE PALACE OF JUSTICE, BRUGES, BELGIUM.

[Gelatine Print, issued only with the Gelatine Edition.]



THIS superb and unique specimen of Renaissance sculpture, occupies nearly the entire side of the room. It is Flemish work of the sixteenth century, and was executed between the years 1529–31 to commemorate the Battle of Pavia, the Treaty of Madrid, and the Treaty of Cambrai (the "Ladies Peace.") Sculptured from the designs and under the direction of Lancelot Blondeel of Bruges, a Flemish painter and architect (who flourished 149– — 1561), it is the work in the main of Guyot de Beaugrant of Mechlin (14– — 155–). He carved the five principal statues, which with the rest of the upper portion are in oak; the frieze in alabaster representing the story of Susanna; also the four genii placed at the lower angles and the chimney proper, which is in black Dinant marble. In the accessories of armorial bearings, foliage, grotesques and so forth, he was assisted by other hands. The chimney was restored in 1850, by the sculptor Geerts of Louvain. The tapestry on the walls was manufactured at Ingelmünster in 1859, in imitation of the original, fragments of which were found in the cellar of the building. The upper portion is divided into three compartments. The central statue which represents Charles V, is, like the other four, nearly of life size. On the right of the Emperor are Maximilian and Mary of Burgundy, his paternal grandparents, and on the other hand Ferdinand of Arragon and Isabella of Castile, his grandparents on the mother's side. The pilasters are decorated with medallions of his parents, Philippe le Beau and Jeanne la Folle, and elsewhere appear portraits of Lannoy, the conqueror of Pavia, Margaret of Austria, Francis I and Eleanor of Austria, with the arms of Spain, Burgundy, Naples and Navarre. Above the head of Charles V are seen the imperial arms encircled with the collar of the Golden Fleece, and surmounted by a helmet bearing an imperial crown, over which is the Gallic cock.

Our print is reversed from the original, and shows but the central part of the chimney-piece, including on the right the statue of Maximilian. The initial cut, however, gives the whole of the work in outline. A plaster cast of this *chef-d'œuvre* is in the eastern section of the architectural court in South Kensington Museum, the south court of which bears on its wall, with other mosaic portraits of eminent art-workers, one by F. W. Moody, of Lancelot Blondeel, the designer of this chimney-piece. It was possibly intended to decorate the original in colors, and to add inscriptions to the cartouches.

COMPETITIVE DESIGN FOR BARN SUBMITTED BY "*Newport.*"

WHERE is no cellar under barn; stone walls to be eighteen inches thick, carried three feet six inches below grade, and above grade to be neatly pointed. Barn to have mortised and tenoned frame, braced above and below at all angles; to be covered with good merchantable spruce sheathing, and with plain pine shingles laid with five inches to the weather. Inside of barn to show studs and outside sheathing. The water for the barn is obtained from a large tank on the second floor supplied from the roof; also from a pump connected with driven well. To be a large box flue, as shown, for ventilation, built from floor of stable to ventilator on roof. The chimney-flue is carried in this, and its heat contributes to increase the draft. To be chutes from the feed-boxes to the mixing-box directly beneath. The manure pile is kept from view by a high shingle fence, the rear of which is hinged in two leaves. The floor of stalls and of washing-table to be of Portland cement: to be a bed of concrete four inches thick between the joists resting on flooring cut in between joists, and cement to be two inches thick on top of this bed; gutters and slopes to be formed in the cement. Stalls to be floored above cement with a frame of 2″ x 4″ yellow pine slats, placed one-half inch apart. Estimate of cost; mason-work, $225; joiner-work, including tinning, well, stable fittings, etc., $1,200; total cost, $1,425.

COMPETITIVE DESIGN FOR BARN SUBMITTED BY "*Sr. Roger.*"

BUILDING constructed of spruce throughout: shingled on roof and outside walls; sheathed walls and ceiling, and plank floor in first story; man's room plastered; hub-guard around carriage-room. Finish painted three coats; sheathing oiled, and shingles dipped in brown petroleum stain. The drain from stalls is to connect with manure heap in rear, and the drain from carriage-wash is to connect with loose cesspool. The author holds a signed bid dated December 20, 1884, to the amount of $1,500.

THE GRAND STAIRCASE OF FRANCIS I, AT THE CHATEAU DE BLOIS, FROM AN ETCHING BY DE ROCHEBRUNE.

IN a fine poem addressed to Louis Blanc by Victor Hugo, the beautiful chateau ill-famed for the assassination of the Duc de Guise, is aptly apostrophized as

> "black and strong,
> With blood upon its front and all along
> The tower eight-sided, where are Gorgon heads
> Agape."

This widely-known work of the sixteenth century M. de Rochebrune has etched with a rare appreciation, the lavish and richly delicate carving of the staircase shining bright through massive dark arches in the foreground of the plate. Its numerous statues and medallions and the constantly recurring F (the initial of Francis I) with his badge of a salamander in flames beneath a crown, as lately restored, are etched with a precision that is admirable.

Octave Guillaume de Rochebrune was born at Fontenay-le-Comte (Vendée) and has won three medals for etching, also the cross of a Chevalier of the Legion of Honor. Hamerton says he is an artist of noble birth, who has the good fortune to live in one of the grandest of the old French châteaux. His etchings are usually, like the one we reproduce, of very large size, and among them are the châteaux of Chambord and Meillant, of Pierrefonds and Ecouen, the Louvre, the Hôtel Cluny and the Cathedral of Strasbourg. Two of his works represent with strength and effectiveness features of his own studio of Terre-Neuve at Fontenay: one its sumptuously carved chimney-piece and the other its doorway, both constructions of great size and magnificence. The former print was reproduced in the *American Architect* for October 9, 1880.

M. de Rochebrune's plates are too little known outside of France, and we are pleased to be enabled to present one of his best to our readers in this reproduction.

THE MONUMENTS AND STATUES OF LONDON. — PLATES IV AND V.

FOR descriptions, see article elsewhere in this issue.

THE *AMERICAN ARCHITECT* STABLE COMPETITION. — II.

THE JURY'S AWARD.

Statue of William I of Holland at Luxembourg Belgium. By Mercié

"*TOM PINCH II.*" — The plan is the best presented, resembling that by "*Doris,*" but is better: compact, without waste room; with the different rooms of proper and ample proportion; convenient platform for drying bedding; cow-shed separated from stable-room; ample room for grooming horses in stable-room; wash-floor in the right place. Details simple and good. The chief objection to the exterior design is the tower ventilator in its grouping with the heavy overhang above the door. The composition of these two motives lacks simplicity, either one of them alone would have been

simple and good, together they are too sensational for the rest of the design. The line dividing the wall from the gable would have been better lower. The rendering seems hurried, and lacks shadow, especially in the windows.

"*Candle-light.*" — The plan is good: compact and without waste room; the waste room however, comes in abundance in the roof, which for the sake of the artistic effect of a gambrel roof is carried considerably higher than is necessary. This with the brick first story makes the building expensive. There is no ventilation beyond what is gained by doors and windows. The design is that of a trained and skilful designer. The rendering is excellent, has more sketchy freedom and knowledge of what to do than any other presented. The details, though not given, can be seen by the perspective to be good throughout; and the proportion of the divisions of wall and roof are very well studied. The dormer is very interesting without being fussy, and the whole design, though probably better in the sparkling black and white rendering than it would be in the two tones of brick and shingle is very well studied and thought out. A view from the rear with the long pitch of the gambrel nearest the eye would not be nearly as happy as the view taken.

"*Rye.*" — Evidently the work of a beginner, but work of a very good character. The plan is simple and good. In the second story the stairs land too near the hay chutes, a defect easily remedied by turning them forward with winders. The details show need of study both in construction, and in character and use of mouldings. The cornice or rather eaves would look very thin. The water-table also needs strengthening. The gable in rear with long and short pitch would be disagreeable in perspective, though looking well in elevation. The rendering, especially, shows the work of a young hand, in the perspective more than elsewhere. The use of corner-boards carried only as high as the shingle frieze is an example of a good effect obtained by simple means. The overhang to hay beam is exaggerated too much in the perspective. The vane could have been omitted. This stable is well within the limit of $1,500.

"*Hope I.*" — The plan is fairly good. The carriage door should be moved to the right to allow standing-room for carriages. The outside entrance to stable-room is of no special value with a porch outside, as it cannot be used for the horses. The harness-room should not open into the stable-room alone, as the reek of a stable in such case injures the harnesses. The mass of the exterior is excellent, symmetrical and simple. The ventilator is particularly good. The porch, good in itself, does not seem an integral part of the building; but resembles a small pavilion butted against the stable. If the roof had been a hood starting from the moulding below the shingle frieze, the result would have been less incongruous; but the porch seems to be more in the way than of use. The details are excellent, show refinement and appreciation of the value of projections and sharp forms. The rendering of the perspective is very good indeed, of the plans poor, and the lettering and mounting of the paper is particularly poor. This stable is well beyond the limit of $1,500.

"*Hay-Foot Straw-Foot.*" — This design shows the work of a good draughtsman. The plan is good, but larger than is necessary. The water-closet is a luxury hardly warranted in a $1,500 stable, and there is waste room in the stable-room. The harness is in an inconvenient place. The shed is of positive value. There are no hay-chutes from second story, and it is doubtful if they could be put in and be practicable, as they would necessarily follow the pitch of the roof which is less than 45°. The general mass is good and sufficiently varied to be interesting. The detail is simple and good. The rendering (excepting the foliage) is excellent, clear, direct and attractive. It is possible that this stable may be within the limit.

"*Hostler.*" — In this design the exterior has been impoverished in mouldings to allow features in the plan that will give effective combination and shadows, but which in themselves are of little benefit as far as utility is concerned. The porch in front of stable-room is one of these effective features. This method of designing is one of the best possible in large buildings, but the result in so small a building as this stable, is to make it look cheap and thin. The design shows the work of a skilful draughtsman. The plan is fairly good. The carriage-room, if there are carriages already in it, will not allow another to be driven in, but it will allow the horse to enter and the carriage to be protected under the porch, to be wheeled into the carriage-room after the horse is unharnessed. The feeding passage is a luxury. The cow-stall should be entirely separated (except access by a door) from the stable-room. The exterior is good in mass, but poor in details; there is not a moulding or projection of any sort except the hood over man's window, and eaves of porch and hay-beam projection. The rendering is so excellent, so seductive that it does more than justice to the design, and disguises the thinness.

"*Spurs.*" — The plan is good, resembles that by "*Rye,*" and is subject to the same criticism. The mass of the stable is simple, but too strongly suggests the idea that it is a slice of a building of indefinite depth. This effect is caused by the main roof having a longer rake than ridge, and both front and rear being so nearly alike. The details are simple. The rendering is good, but lacks shadow. The scratches that frame the perspective could have been omitted.

"*Inconnu.*" — Plan is good. Harness-room a little inconvenient in relation to stall-room. Exterior mass simple and good. Dormer over hay-loft not in keeping with the rest of the design. False gable over entrance not worth doing. Hay door too close in under rafters for convenience. Details simple. Rendering good, straightforward and clear, perhaps a little too evenly drawn on all surfaces, regardless of the presentation of their planes to the light. Landscape not well drawn.

"*Old Colonial.*" — Plan fairly good, but expensive; so much room for feed is unnecessary. Feeding the horses with hay from behind them is inconvenient. The direct access to the stable-room is good. The charm of real old Colonial work is in its classical symmetry, and in its delicate and refined detail. This design has the symmetry, but the fine detail it has not. The cornice lacks projection and depth. The proportion of space between shed cornice and main cornice is relatively too high for the wall below. The lantern needs pilaster treatment in its uprights, and also an entasis, which perhaps unconsciously has been given in the perspective.

"*Newport.*" — In the plan, it is rather inconvenient to lead the horse back into stable after unharnessing. Cow-stall should be separate. Harness-room will be close. Mass of design good, all under one roof. Double gable unnecessary, one would have been better. The combination of ventilator and chimney particularly unhappy in design, as is also the lift in roof on rear to allow head-room above feed-boxes. Detail good, refined and strong. Rendering excellent.

"*Simplicity II.*" — In plan the stalls are rather far from the carriage-room, otherwise the plan is good. The building has a simple roof and mass. The loggia in man's room is a luxury and a snow-trap. The peak above hay-door is eccentric, and the ventilator uninteresting in form. The rendering seems timid, but is careful.

"*Caius.*" — There is waste room in the stable-room and in the carriage-room, otherwise the plan is good. The exterior has too many motives. The harness-room bay is unnecessary, and not attractive; the scale of glass openings in the window above as compared with other windows is much too large. An arch in shingles is unsatisfactory; it is much better to treat it with mouldings. The detail is thin. The rendering is good.

"*Mott Haven.*" — Waste room in first story-plan. Cow-stall should be separate. Stableman's room too large. Harness-room in inconvenient place. Exterior mass good. Details simple. Rendering careless, and not doing justice to the design.

"*Gambrel.*" — Waste room in stable-room, expensive plan. Exterior: hay-door gable would have been better if carried up flush with wall below. Proportions of gable need studying. Gas-lantern window, though convenient, of bad proportions; ventilator unsatisfactory in design. Details simple. Rendering clear.

"*Reason.*" — Plan compact. Harness-room would be close; mass simple, walls too high for roof. Ventilator needs study. Outside chimney could have been carried inside and would have looked better so. Detail simple. Rendering correct, but unattractive.

"*Ad. Rem.*" — Plan expensive. No necessity for so large a feed-room: to feed horses by carrying hay into stall from rear is inconvenient. Exterior mass simple. Breaking the belt-course to make hoods over windows is not good in design, a continuous line always makes the design quieter. Jig-sawed work under sills unnecessary. Combination of chimney and ventilator unsuccessful; ventilator needs study. Rendering spotty.

"*Old Hundred.*" — In plan, cow-stall should be separated from stable-room. The two columnar motives on exterior are unnecessary and unsatisfactory. The ventilator would have been better over centre of ridge. The rendering, in pencil, is fairly good.

For the Jury, C. H. Walker.

VICTORIA STONE.

"Necessity is the mother of invention." It is an old maxim, but like history, it continually repeats itself. The growth of our towns and the demand of the people for well-paved streets have led to the discovery that natural stone is limited in the supply, and that, if we are to have our streets well paved, we must resort to the inventive faculty, the exercise of which is the result of compulsion by our stern mother "Necessity." It is of no use calling-in the celebrated apostrophe of Liston, "York, you're wanted." York stone comes sluggishly and very independently to a distance from its native quarries; nay, more, it is expensive, and if parish surveyors had any hearts they would be broken as certainly as the purses of the owners, who are now compelled to pay under the very celebrated section 105 of the Metropolis Local Management Act, and the equally stringent section 150 of the Public Health Act. These

two sections have levelled all distinctions between the metropolis and the provinces. Under their operation the old-fashioned natural earth and gravel footpaths are doomed to disappear. Tar paving has been interposed as a temporary expedient, but when we come to the permanent paving of footpaths, thereafter to be repairable by the inhabitants at large, we have to contemplate the necessity of filling up a great void between this and York stone.

The application of the principle applied to the production of concrete has led to the discovery of an artificial stone as hard and as enduring as York, in slabs prepared in exact sizes, and capable of being easily laid down, without the irritation of the everlasting chip, chip, chip, of the mason's hammer during the process of what is known as "squaring." Very recently we had the opportunity of witnessing day by day the process of laying down 10,000 feet of Victoria stone in Waterloo Road and its neighboring streets in the parish of Lambeth. When a surveyor of the great experience and practical judgment of Mr. Hugh Macintosh, of Lambeth Vestry, approves of an artificial stone, we cannot help feeling that the days of York are numbered. The pavement in Waterloo Road attests the value of the process, by which we now accelerate the intentions of nature by a few thousand years. Nor is the process very wonderful when it comes to be examined, and when once the central idea is correctly understood.

Columbus found it very easy to make the egg stand on end, although it was a performance difficult enough to the prelates and monks to whom Columbus propounded the problem. The inventor of Victoria stone took Mount Sorel granite chippings, formed them into a concrete, and when this was properly set, put the mass into a cold solution or bath of natural silica. The impregnation of the silica caused the mass to petrify, so that which was a concrete became stone. There is no other word for it because the character of stone is surely attained by that which requires a crushing power of 6,441 lbs. weight per cubic inch to pulverize it in the same degree as 5,851 lbs. will do for the best York.

The simplicity of the process is not, however, to be confounded with the common concretes in connection with silica. Only the best Portland cement is used in the production of Victoria stone, and the broken granite is very carefully washed in order to procure uniformity in the stone. The moulding of the slabs has also to be very carefully attended to, in order to secure perfection in jointing them together when they are laid down in streets. Any one who will walk down the east side of Waterloo Road will observe that the ends and sides of the slabs are equally level, and the edges being perfectly true, are joined with as much accuracy as parquetry in the floor of a drawing-room or the hall of a palatial mansion. The risk which always attends the "squaring" of York is thus avoided, and the unsightly irregularity of joints completed by mortar is thus impossible with Victoria stone. Before, however, the Victoria is thus laid down the slabs are put into the silica bath, where they remain for eight or ten days, and thus we have a block into which water cannot penetrate, and which is non-porous. Lastly, the slabs are exposed for a month, at least, to the air before being used in paving or otherwise, for it is not alone to paving that Victoria stone is exclusively applied.

We saw at the Agricultural Hall Building Exhibition in 1882, a flight of spandrel steps which are in use at Mile End Infirmary, the panelled window-head, nine feet long, at the same institution, and railway-platform copings three or four inches thick; a paving-slab which had stood five years' heavy traffic at the corner of Commercial Street, and two pieces of stone which had stood eleven years of traffic in Upper Street, Islington, showing no appreciable wear. At the well-known factory of Messrs. Peek, Frean & Co., may be seen thirty-six external panels in the clock-tower and chimney-stacks. Slowly but surely the utility of the stone has approved itself to the judgment of responsible persons capable of rising superior to prejudice, and who are able to get rid of the antiquated forms of thought in public affairs.

In and around London, district Boards, Vestries, Local Boards, Improvement Commissioners, and Sanitary Authorities, as well as great manufacturers have adopted Victoria stone. All these authorities have been advised by competent surveyors who are not likely to err in any large number, and for so long a time as the number of years in which Victoria stone has been extensively used.

When, in addition to all this, we find railway directors, wharfingers, military authorities, managers of asylums, infirmaries, and schools, as well as bakers and brewers, agreed upon using the stone, we are prepared to expect that it is found suitable for cattle-troughs, sinks, cisterns, copings, caps, window and door-sills and steps, and staircases of any shape or size. Its strength, hardness, and endurance must have been attested by competent authorities, who not only pay out of public moneys, but at their own trade charges, for a material which they prefer to others that have long held a high reputation. Any one having good reason to inquire may easily satisfy himself by a visit to the Groby Quarries, in Leicestershire, or to the works of the company, near Stratford Market Station. Intelligent and thoughtful persons will be able to add a chapter to the revelations of Hugh Miller, if they carefully follow the processes of blasting in order to obtain the granite, the washing by machinery to cleanse it from all earthy and deleterious particles likely to interfere with the subsequent processes of moulding and mixing with an ascertained quantity of Portland cement before being placed in the moulds. The moulds are metal-lined, and of the usual sizes for paving-slabs. They are filled by hand labor, which, it is curious and instructive to find, is more accurate than steam-machinery. Then the concrete is taken to the bath, which may be described as the very reverse of the Roman or Turkish bath, for that is employed to open the pores by heat. For about ten days the slabs are immersed in silica or flint dissolved in caustic soda, and petrifaction is complete. We have now a square stone with two smooth sides, for Victoria stone is like an old coat made of West of England cloth, which may be turned when the nap is gone. Thus, while York stone in the course of time presents a groove between the wall and the kerb, Victoria stone can be turned, and re-presents to the eyes of the ratepayer a smooth surface at the cost of relaying; no mean advantage in these days, when the cost of paving is so heavy an item in municipal estimates. Happily the Local Government Board has removed one very great difficulty, and it is now possible to obtain the necessary official sanction for loans for paving with Victoria, as with York stone. The endurance or permanence is, as far as our experience extends, equally applicable to both forms of paving. The comfort of the inhabitants in streets undergoing the process of being paved is largely promoted by the comparatively silent process of laying slabs without the irritation of the operation technically called "squaring," but which is by no means dealing with your neighbor "on the square."—*Sanitary World.*

"AN ARCHITECT'S SUIT."

MINNEAPOLIS, MINN.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — Please permit a reference to "An Architect's Suit," in your Notes and Clippings of February 7. Many of your readers who knew Mr. Wilson to have been only a few years ago doing some of the largest and very best work in the country were doubtless pained to see the paragraph given such a place. The report may have been true in every particular, but chancing to have been present at a good part of the trial, I certainly believe I heard testimony to the following effect: —

By Mr. Wilson, admitting a contract price for the work done by him (a less sum than $840) and no testimony to show value of services.

By each defendant, admitting this contract price, but alleging a further clause that all claim for services to be forfeited in case the building cost more than $20,000.

By Mr. Wilson denying this clause.

Thus far one against two.

By a builder — one of the most aggressively honest appearing men ever put upon a witness stand — swearing that Mr. Wilson told him he would not get a cent unless he could get it built for $20,000, and that he (the builder) made no bid, as he figured it up to $28,000, several items being still lacking, and that the total would be still higher.

Document (original) being a bid signed by this same builder for the building in question, complete, for the sum of $22,500.

I am positive that little if any other testimony was taken, and that all of importance is mentioned above.

Yours, etc., FREDERICK G. CORSER.

CONTENTS OF SOME PARIS LIBRARIES.

ROME, February 3, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In the article entitled "Some Smaller Paris Libraries," through some mistake of myself or the printer, the number of volumes in the Bibliothèque St. Geneviève is put at one million two hundred thousand, while those in the Arsenal are estimated at four million five hundred thousand. The numbers should be one hundred and twenty thousand and four hundred and fifty thousand respectively. Will you kindly make this correction, and oblige,

Yours truly, C. H. BLACKALL.

A QUESTION OF ROYALTY.

WASHINGTON, D. C., February 9, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — I see two pages of the last issue of the *American Architect* (February 7) devoted to a patent fire-proof construction of C. L. Staub. More than five years ago, in the Model School-House Competition of *The Sanitary Engineer*, I designed doors to be made in the manner shown and described by Mr. C. L. Staub in his Letters Patent. I enclose you a tracing from the drawing designed in December, 1879, and made in January, 1880. Submitted to committee February 2, 1880. The principle is sheet metal between two thicknesses of wood. In doors three thicknesses of wood, two of metal. Now suppose I or the public should desire to use this method of fire-proofing, would we under the circumstances have to pay a royalty? I having invented and drawn the design more than two years before Mr. Staub filed his application for a patent.

Yours truly, GLENN BROWN.

[THE fact that you conceived a style of building identical with that of Mr. Staub does not affect his patent, as you say your idea was only embodied in an unexecuted competitive design.— EDS. AMERICAN ARCHITECT.]

DUTIES ON WORKS OF ART. — A meeting of American artists was held at Rome, February 15, at which Mr. Story presided. A petition to Congress was prepared, asking for the abolition of duties on works of art imported into the United States.

NOTES AND CLIPPINGS.

Our Forests a great Interest.—The value of the products of our forests in 1880 exceeded $700,000,000. The value of the iron and steel produced that year was less than $300,000,000; of coal, both anthracite and bituminous, less than $100,000,000. But the forests are not only valuable because of their products, which are greater than any single crop, greater than corn, or wheat, or cotton. They are of inestimable value for their influence upon the climate, on which all agriculture more or less depends. And yet it is almost impossible to get anything done by Congress to secure the preservation and proper economic management of our forests, while the duty on foreign lumber, the effect of which is to hasten their destruction, is retained, against all the teachings of science and experience.—*Boston Herald.*

Queen Eleanor's Cross, Northampton.—Queen Eleanor's Cross near Northampton, England, was made by John de Bello between 1291 and 1294. It is one of many crosses in different places having the same name, most of which have perished. In 1762 it was "restored" into a memorial "of a very different personage, and a tablet with a long and pompous inscription, recording all the glories of the reign of Queen Anne and the loyalty of the gentry of the country formed the most conspicuous portion of the work." The late Mr. Blore, who restored many "restored" Norman towers and Queen Anne mansions in England was called to the delicate task of undoing the restoration of 1762 on the Eleanor cross at Northampton about forty years ago. The monument is now in bad condition, owing to the ruin wrought by relic hunters and mischievous persons who throw stones at it and otherwise deface the cross and the four statues about it. Mr. Albert Hartshorne writes to the *Athenæum* to protest against another restoration of the kind that replaces battered ancient work by poor modern stone-cutting.

Persian Paintings.—The palaces of Ispahan are decorated with large oil paintings by the most eminent Persian artists of their day. All are life-size, and none are devoid of merit. Some are very clever, particularly the likenesses of Futteh Ali Shah and his sons, several of whom were strikingly like their father. As Futteh Ali Shah had an acknowledged family of seventy-two, this latter fact is curious. These paintings are without frames, spaces having been made in the walls to receive them. The Virgin Mary is frequently represented in these mural paintings; also a Mr. Strachey, a young diplomat who accompanied the English mission to Persia in the reign of our Queen Elizabeth, is still admired as a type of adolescent beauty. He is represented with auburn hair in the correct costume of the period, and copies of his portrait are still often painted on the pen-cases of amateurs. These pen-cases, or *kalamdans*, are the principal occupation of the miniature painter. As one-fourth of the male population of Persia can write, and as each man has one or more pen-cases, the artist finds a constant market for his wares in their adornment. The pen-case is a box of papier-maché eight inches long, an inch and a half broad, and the same deep. Some of them, painted by artists of renown, are of great value, £40 being a common price to pay for such a work of art by a rich amateur. Several fine specimens may be seen in the Persian Collection at the South Kensington Museum. It is possible to spend a year's hard work on the miniatures painted on a pen-case. These are very minute and beautiful. The writer possesses a pen-case painted during the lifetime of Futteh Ali Shah, a King of Persia who reigned long and well. All the faces—none more than a quarter of an inch in diameter—are likenesses; and the long black beard of the King reaching to his waist, is not exaggerated, for such beards are common in Persia.—*Chambers's Journal.*

Relation of Soil-Water to Cholera Epidemics.—That too much as well as too little water in the soil is unfavorable to cholera is vouched for by a large mass of facts. As I watched the cholera in Bavaria during 1854, I was surprised to find that the marshy districts, where, as a rule, the poorest dwelt, were exempt from epidemics. The great Donau bog, which lies between Neuburg and Ingolstadt, was surrounded by the epidemic, but the disease did not enter the villages on the fen. On the Freisinger moors an epidemic occurred at Halbergmoos. On going thither the affected houses were found to stand on a tongue of land composed of quartz, which tongue reached inward on the moor. Reinhard had proved the same thing for Saxony. The northern part of Saxony, which lies on the Spree, is a highly malarious district. For the eleventh time that cholera visited Saxony it shunned this region of fever. I will not say that cholera cannot be epidemic on a fen, but I do believe that when such an occurrence takes place we ought to ask ourselves what relation it may have with the state of moisture of the soil. The theory on the soil and subsoil water requires that a knowledge should be obtained of what takes place in and over the soil on the outbreak and on the cessation of cholera. It requires, as Port has said, a continuous record of facts. That cholera should very seldom be met with in the neighborhood of and on mountains is also in harmony with the disposition of cholera in respect of time; so that, as the frequency of cholera in these regions diminishes, the rainfall increases; the weather and cholera are equally capricious. Towns among mountains which are refuges for fugitives from cholera are but seldom situated on a soil which in and of itself would exclude cholera. Salzburg and Innsbrück have, for example, never yet been visited by cholera. Further, in 1866, these towns escaped, although a considerable influx took place from the seat of war where cholera raged. Salzburg, but still more Innsbrück, stands on the alluvial soil of the Salzbach and the Inn, as Munich stands on the Isar; but the first-named towns have about fifty per cent more rainfall than Munich. I can only imagine that the necessary degree of dryness for the development of cholera would be attained but very rarely in Salzburg and Innsbrück, just as occurred partially at Lyons in 1854, and in June, 1859, at Bombay, where cholera prevailed during the monsoons, which, as a rule, drive the cholera away.—*Dr. Max von Pettenkofer, in Popular Science Monthly.*

"Enlightened Selfishness," as illustrated in Unenlightened Building.—You have only to take the Cortlandt Street or Desbrosses Street ferry and cross to Jersey City in order to see how slight a motive to fire-proof building "enlightened selfishness" is. There is the Pennsylvania Railroad Company, whose offices and ferry-houses were burned down in the early part of August last, with a loss of some $200,000, rebuilding the same of wood. No part of the vast structure, which roofs in perhaps five acres of ground, is of brick or other fire-resisting material, except a building devoted to office uses, and there is wood enough in that to render the brick a mere shabby overcoat, or linen duster, as it were. The roof is tinned, and that is the only pretense that is made of a structural attempt in the direction of fire-proofing. The company is not a buyer of insurance, and, so far as the building itself, or the group of buildings, is concerned, the insurance companies can afford to regard the material thereof and the mode of putting it together with entire complacency. But not so as respects the jeopardy to neighboring structures, indeed, to a whole long line of warehouses and vessels, which and whose contents to the value of millions of dollars are insured. No doubt, as before, the railroad company will have the buildings thoroughly equipped with fire-extinguishing apparatus and a well-drilled force of men to use it. But in August last these did not avail to save the property from destruction. The fire then luckily happened on a still night and right after a succession of heavy rains. Had it been a time of drouth and half a gale of wind blowing, the limit of the fire's ravages would only have been reached with an exhaustion of material to burn. There is plenty of bad building along the Jersey City river front—in fact, we do not know of any good building there—and the Pennsylvania Railroad Company is only chargeable with its own contribution to the general stock of combustibles, but it was naturally to have been supposed that such a wealthy corporation would have found it wise to incur the additional expense requisite for making its new structures approximately fire-proof. Naturally, do we say? No, that was a mistake. All experience shows that it is not natural for either corporations or persons, however wealthy, to build so as not to burn. Corporations and persons get scared sometimes by the fire peril, and, as communities, combine to legislate how others shall build, but for themselves severally they will, whenever they can, dodge the law themselves helped to enact. "Enlightened self-interest," much as it is lauded by the philosophers, does not suffice as an inducement for the voluntary doing of what ought to be done in this matter of architecture. Nothing but legal compulsion will serve. Over in Jersey City there appears to be no building law of any account, or if there is one, nobody pays any attention to it. So it happens that a great corporation, wise enough to know better and rich enough to do better, has for three months past been heaping up a mass of kindling-wood to feed, if not to generate, the great conflagration, which, at some time in the not far-off future, is to sweep the front of Jersey City and bankrupt a dozen or more insurance companies.—*Insurance.*

Purifying Water by Air.—An interesting experiment on the purification of water by aëration is now going on at Philadelphia under the superintendence of Mr. Lutlow, chief engineer to the Water Department of that city. The plan is based on the discovery of Dr. Albert R. Leeds, to the effect that the action of air in purifying water is greatly increased by mixing the air and water under pressure. The greater the pressure the greater the absorption of oxygen, and consequently the greater the reduction of impurities. At Philadelphia, in order to make the experiment on a practical scale, a Fairmount turbine engine was converted into an air-pump which delivered 20 per cent by volume of free air into the water-main, this being the proportion found necessary by Dr. Leeds's experiments to surcharge the water. Analysis showed that the quantity of free oxygen in the aërated water was 17 per cent greater than before aëration, while the quantity of carbonic acid was 53 per cent greater, and that of the total dissolved gases was 16 per cent greater. The percentage of free ammonia was diminished to one-fifth of its former amount. The percentage of free oxygen represents the excess over and above what was required to effect the oxidation of the organic impurities. These results are very favorable, and point to the practical feasibility of reducing the percentage of organic matters contained in water unduly contaminated with sewage by this plan.—*Engineering.*

Prince Demidoff.—The Prince Paul Demidoff, whose name has become well known of late years, through the scattering of all the marvelous works of art that had been gathered at San Donato, near Florence, died lately in Paris. He was a man of enormous fortune, a principal owner of the malachite mines of Russia, and as great a roué as the Emperor Vitellius. Under the empire his escapades were the talk of Paris; he gambled for millions against one of his wealthy countrymen, and liked to be compared with Nero, for which purpose he made his servants dress like gladiators and fight before him. Then he married and a year afterward his wife died. Fearing that people might not think him sad enough, he resorted to all sorts of melodramatic tricks to show his grief, hung his wife's dresses about his room, and wandered about the streets in sordid garments. He sold his valuable collection simply out of caprice, and sold the old palace with them. Since then (1880) he has made another collection, which is housed in a villa at Pratoline, near Fiesole.—*N. Y. Commercial Advertiser.*

The By-Products of Charcoal-burning.—The vast quantity of smoke from 25 brick charcoal pits, producing 50 tons of charcoal per day, at Elk Rapids, Mich., is thus utilized: Large tubes over the pits, by means of a rotary suction fan, convey the smoke and gases to a great still of 2½ inch copper pipe, from which, after passing the purifier, runs a clear amber stream of pyroligneous acid. Each cord of wood contains 28,000 cubic feet of smoke (?) and, from 100 cords per 24 hours, there is produced 12,000 pounds acetate of lime, 200 gallons alcohol, and 25 pounds tar, beside the gas used under the boilers. Thus this product, from 40,000 cords of wood per annum, is a source of profit at little current expense.—*Springfield Republican.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

312,251. SASH-FASTENER. — Francis M. Case, Denver, Col.

312,262. DEVICE FOR RAISING AND LOWERING WINDOW-SASHES. — Henry Eitel and James E. Hunt, San Francisco, Cal.

312,266. ROD PLUMBING-LEVEL.—William Gurley, Troy, N. Y.

312,268. FASTENING FOR MEETING-RAILS OF SASHES.—James C. Hibbs, Brownsville, Mo.

312,269. ILLUMINATED TILE. — Eben N. Higley Great Falls, N. H.

312,276. AUTOMATIC ELEVATOR-GATE. — Robert Lade, Holyoke, Mass.

312,281. FILTER.—Jules Mallie, Paris, France.

312,284. FIRE-PROOF PARTITION AND CEILING. — Charles Mettam, Bayonne, N. J.

312,290. WINDOW-GLASS. — James G. Pennychuck, New York, N. Y.

312,294. DOOR-HANGER. — Edward T. Prindle, Aurora, Ill.

312,300. COMBINED SHUTTER-WORKER AND SLAT-OPERATOR.—Thomas H. Smith, Auburn, N. Y.

312,305. BUILDING-BLOCK.—Solomon T. Trumbull, Gloucester, Mass.

312,315. SASH-HOLDER. — Fred Aurand and Freeman H. Sherer, Youngstown, Ohio.

312,349. CAST-IRON COLUMN. — P. Henry Griffin, Detroit, Mich.

312,350. COMBINED BORING AND REAMING TOOL. —William E. Hill, Kalamazoo, Mich.

312,356. ARTIFICIAL STONE.— John D. King, Fairbury, Neb.

312,357. CAR-DOOR FASTENING. — Jacob Pinzer, Pittsburgh, Pa.

312,374. DOOR OR WINDOW SCREEN. — Obadiah G. Newton, Trenton, Mo.

312,375. WALL OF BUILDINGS AND OTHER STRUCTURES.—W. H. Orr, Carlisle, Ind.

312,415. PORTABLE FIRE-ESCAPE. — Hermann Wettstein, Harvard, Ill.

312,419. ADJUSTABLE CLAMPING DEVICE. — Geo. W. Zeigler, Washington, D. C.

312,423. STEAM-HOIST. — Camille Bezançon, New York, N. Y.

312,426. DOOR-SECURER. — Edward A. Bullock, Du Bois, Pa.

312,433. GLUING-TABLE.— Jas. H. Clemons, Dolgeville, and Joseph W. Bower, Stratford, N. Y.

312,444. SHINGLE-PLANING MACHINE.—Thomas S. Disston, Philadelphia, Pa.

312,451. MANUFACTURE OF TARRED PAPER. — Michael Ehret, Jr., Philadelphia, Pa.

312,460. STAPLE. — Jonathan Haight, Pittsfield, Mass.

312,464. METHOD OF CONSTRUCTING HOLLOW BRICK WALLS.—Henry Harwood, Warren, O.

312,526. FLOOR-CLAMP. — Thomas A. Southwick. Brockton, Mass.

312,535. DRAWING-BOARD. — Frederick Weber, Philadelphia, Pa.

312,548. LEVEL.—John W. Atkinson, Benton, Ark.

312,549. FIRE-PROOF SHUTTER. — Charles F. Brigham, Boston, Mass.

312,553. CHIMNEY-COWL.—William E. Cooper, Dunkirk, N. Y.

312,575. DOOR-LATCH.— Thomas J. Morgan, Hyde Park, Ill.

312,582. PILE-DRIVER.— Jos. W. Putnam, New Orleans, La.

312,585. SKY-LIGHT. — John Seton and William Conolly, Brooklyn, N. Y.

SUMMARY OF THE WEEK.

Baltimore.

DWELLING. — Jno. J. Weissner, Esq., is to have a three-st'y brick and stone dwell., 43′ x 75′, on Belair Ave., and to cost $12,000, from designs by Geo. A. Frederick, architect; Fred'k Decker, builder.

COTTAGE.—Geo. A. Frederick, architect, is preparing drawings for Philip Sinz, Esq., for a two-st'y frame cottage, 32′ x 45′, to be erected on the Harford Road, and to cost $3,000.

TOWER AND SPIRE. — Geo. A. Frederick, architect, is preparing plans for a tower and spire for St. James Church, cor. Eager and Aisquith Sts., 24′ square, and 250′ high, to be built of brick and Kentucky freestone, and to cost $30,000; J. M. Getz, carpenter.

OUT-BUILDINGS. — Miss Helen Whitridge is to have built brick and frame out-buildings, adjoining Druid Hill Park, to cost $5,000; from designs by Geo. A. Frederick, architect.

MARINE HOSPITAL.—Geo. A. Frederick, architect, is preparing plans for the United States Marine Hospital, to be built on Remington Ave., near Huntingdon Ave., which will be completed and forwarded to the Department at Washington, and advertisements for proposals published by the time of our next issue.

BUILDING PERMITS. — Since our last report seven permits have been granted, the more important of which are the following: —

J. C. Parker, 3 two-st'y brick buildings, n s alley, n of Lafayette Ave., and w of Mound St.

Sam'l Richmond, 2 two-st'y brick buildings, s s Hoffman St., rear s e cor. Hoffman and Harford Aves.

P. Reddington, 3 three-st'y brick buildings, w s Aisquith St., s of Hoffmann St.

Chesapeake M'f'g Co., one-st'y brick building 50′ x 100′, s s Federal St. bet. North St. and Falls Alley.

Brooklyn.

BUILDING PERMITS. — *Fulton St.*, n w cor. Bedford Ave., two-st'y brick store, tin roof; cost, $18,000; owner, Archibald Scott, 216 Adelphi St.; architect, A. Hill; builders, A. Rutan and Long & Barnes.

Varet St., n s, 58′ e Graham Ave., 2 two and three st'y frame tenements (brick-filled), one with stable, tin roof; cost, $3,000; owner, Fred Luhrsen, 64 Graham Ave.; architect, H. Vollweiler.

Hull St., n s, 300′ e Stone Ave., 2 three-st'y frame dwells., tin roofs; cost, $3,000; owner, J. Dornsife, Hull St., near Stone Ave.; architect, J. Rogers.

Madison St., n s, 200′ e Patchen Ave., 5 three-st'y frame (brick-filled) tenements, tin roofs; cost, each, $3,000; owner and builder, Daniel Lauer, 1534 Fulton St.; architect, A. Hill.

Madison St., s s, 20′ w Howard Ave., 2 three-st'y frame (brick filled) tenements, tin roofs; cost, each, $3,700; owners, Gaynor & Mehler, 464 Park Ave.; architect, S. Harbison; builders, G. Straub and A. Schuman.

Thirty-ninth St., n s, 180′ w Fourth Ave., three-st'y brick dwell., tin roof, wooden cornice; cost, about $3,500; owner, Ann Abraham, 139 Thirty-ninth St.; builder, J. J. Abraham.

Reid Ave., n w cor. Pulaski St., three-st'y brick store and flat, tin roof; cost, $7,800; owner, L. Bredehoft, Broadway, cor. Lawton St.; architect, F. Holmberg; builders, E. Loerch and J. Rueger.

Boerum St., n s, 125′ w Bushwick Ave., four-st'y frame tenement, tin roof; cost, $6,000; owner, Mrs. S. Diercks, Boerum St.; architect, Th. Engelhardt.

Stagg St., No. 223, n s, 175′ w Bushwick Ave., three-st'y frame (brick-filled) tenement, tin roof; cost, $4,000; owner, Rudolph Brand, on premises; architect, Th. Engelhardt.

Duryea St., s s, 225′ e Broadway, two-st'y frame (brick-filled) dwell., tin roof; cost, $4,000; owner, Claude Lorrane, 1157 Broadway; architect, Th. Engelhardt.

Middleton St., s s, 105′ e Marcy Ave., 5 three-st'y frame (brick-filled) dwells., tin roofs; cost, each, $4,500; owner, F. Mosetter, 122-126 Harrison Ave.; architect, Th. Engelhardt.

Gwinnett St., n s, 85′ e Marcy Ave., three-st'y frame (brick-filled) tenement, tin roof; cost, $3,800; owner, etc., the same as last.

Middleton St., n s, 140′ w Harrison Ave., 2 three-st'y frame (brick-filled) tenements, tin roofs; cost, each, $5,000; owner, etc., same as last.

Elm St., n s, 265′ w Evergreen Ave., three-st'y brick tenement, tin roof; cost, $4,000; owner and builder, John Hagan, 69 Elm St.; architect, John Herr.

Scholes St., No. 103, n s, 155′ w Ewen St., three-st'y frame store and tenement (brick-filled), tin roof; cost, $3,000; owner, Louis Goetting, 105 Scholes St.; architect, Th. Engelhardt.

Quincy St., s s, about 200′ e Reid Ave., 5 two-st'y brown-stone dwells., tin roofs, wooden cornices; cost, each, $5,000; owner and builder, P. Concannon, Summer Ave. and Van Buren St.; architect, J. D. Reynolds.

Twelfth St., n s, 155′ 4″ e Seventh Ave., 3 three st'y brick dwells., tin roofs; cost, each, $4,000; owner, J. Brown, 381 Eleventh St.; architect, J. D. Reynolds; builder, W. Brown.

Gwinnett St., n s, 184′ e Harrison Ave., 2 three-st'y frame (brick-filled) tenements, and 254′ e of Harrison Ave., 2 three-st'y frame (brick-filled) tenements, tin roofs; cost, each, $4,500; owner and builder, Jacob Bossert, 233 Lynch St.; architect, Jno. Platte.

Gwinnett St., n s, 234′ e Harrison Ave., three-st'y frame (brick-filled) store and tenement, tin roof; cost, $4,290; owner and builder, Jacob Bossert; architect, Jno. Platte.

Buffalo.

Mr. R. A. Bethune, architect, has in hand the following buildings: —

FACTORY. — Factory-building on Lake View Ave., for H. T. Koerner; cost, $22,000.

HOUSES. — *Summer St.*, house, for Spencer Kellogg; cost, $15,000.

Prospect Ave., semi-detached house, for E. Webster & Son; cost, $18,000.

Prospect St., semi-detached stable, for E. Webster & Son; cost, $5,000.

Main St., house for A. A. Hickman; cost, $5,000.

Dearborn St., house, for Dr. J. H. Potter; cost, $4,000.

Hodge Ave., house, for Mrs. E. Baldauf; cost, $4,500.

Prospect Ave., house, for G. N. Mitchell; cost, $3,500.

Hodge Ave., house, for Mrs. John Pierce; cost, $3,500.

Ashland Ave., house, for Mrs. Davidson; cost, $2,500.

Elmwood Ave., house, for Geo. L. Thorn; cost, $3,500.

SCHOOL-HOUSES.—Public School No. 8; cost, $50,000.
Public School No. 18; cost, $30,000.
Public School No. 24; cost, $40,000.
Police Station No. 11; cost, $15,000.

Chicago.

HOUSES. — P. W. Ruehl, architect, planned the two-st'y dwell., to be built on Ashland Ave. for A. Blettner, Anderson pressed brick, red sandstone trimmings.

Same architect has completed drawings for two-st'y stone front house on Harrison St., for M. Chanski.

STORE.—P. W. Ruehl, architect, planned the stone-front store-building on West Twelfth St., for J. J. Phelan.

BUILDING PERMITS. — Thomas Brown, 2 two-st'y flats, 3221-23 Calumet Ave.; cost, $8,000; architect, J. H. Huber; builder, N. Hoeft.

Dale & Hart, six-st'y factory, 43-45 Fourth Ave.; cost, $45,000; architect, J. M. Van Osdel & Co.; builder, J. Linguist.

New York.

BREWERY.— A five-st'y and basement brick brewery, 25′ 9″ x 87′, is to be built on the e s of Ave. A, between Fifty-sixth and Fifty-seventh Sts., at a cost of about $20,000, from designs of Mr. A. Pfund.

HOTEL. — On the s w cor. of Forty-second St. and Fourth Ave., a four-st'y hotel, from designs of Mr. Wm. Kuhles.

INSURANCE BUILDING. — The N. Y. Equitable Life Insurance Company, of 118 to 124 Broadway, have appointed Mr. Geo. B. Post architect for the proposed extension to their building.

APARTMENT-HOUSES.— Sixteen five-st'y brown-stone flats, 25′ x 67′, are to be erected at a cost of $300,000, for Messrs. Moore & McLaughlin, from plans of Messrs. Thorn & Wilson.

At One Hundred and Twenty-fifth Ave., Ninth Ave. and Manhattan St., an apartment-house is to be built for Mr. Jared W. Bell, from plans of Thayer & Robinson.

BUILDING PERMITS. — *Fulton Ave.*, e s, 201′ s One Hundred and Sixty-eighth St., three-st'y frame tenement, tin roof; cost, $8,000; owner, Mrs. Sarah J. Miller, 2155 Second Ave.; architects, Ebeling & Heinicke.

West Seventeenth St., Nos. 142 *to* 152, 6 five-st'y brick tenements and stores, tin roofs; cost, total, $120,000; owner, Rudolph Bohm, 270 Grand St.; architect, Wm. Graul; builder, John Goerl tz.

Seventy-first St., s s, 213′ e First Ave., five-st'y brick tenement, tin roof; cost, $16,000; owners, Julius Landauer, 337 East Fiftieth St., and Maurice Kaim, 238 East Forty-eighth St.; architect, F. S. Barus.

One Hundred and Seventh St., s s, commencing cor. Fourth Ave., running east, 9 four-st'y Connecticut brown-stone tenements, tin roofs; cost, each, $12,000; owner, Wm. F. McEntee, 224 East One Hundred and Fifth St.; architect, F. T. Camp.

West Thirty-first St., Nos. 209 *and* 311, 2 five-st'y brick tenements, tin roofs; cost, each, $15,000; owner, Geo. W. Bond, 584 Lexington Ave.; architect, M. C. Merritt

Columbia St., No. 28, five-st'y brick tenement, tin roof; cost, $15,000; owner, B. Rosenstock, 191 First Ave.; architect, E. W. Greis.

Willett St., Nos. 89 *and* 91, 2 five-st'y brick tenements and stores, tin roofs; cost, each, $15,000; owner, Thomas Rothmann, 21 Clinton St.; architect, Julius Boekel.

West Sixteenth St., Nos. 226 *and* 228, 2 five-st'y brown-stone front tenements, tin roofs; cost, each, $18,000; owners, McAuliffe & Gabay; architects, A. B. Ogden & Son.

Forty-second St., s s, 155′ w Second Ave., two-st'y brick stable, gravel roof; cost, $5,000; owners, Jos. and Robert Gordon, Second Ave. and Thirty-ninth St.; architect, Albert Wagner.

Fifty-first St., s s, 75′ w Fourth Ave., 3 five-st'y brick flats, tin roofs; cost, each, $28,000; owners and builders, P. & J. F. McManus, 161 East Fifty-seventh St.; architect, J. H. Valentine.

Fourth Ave., n e cor. Eighty-seventh St., five-st'y brick tenement and store, tin roof; cost, $22,000; owners and builders, Clark & Nason, 305 East Eighty-first St.; architect, G. A. Schellenger.

Fourth Ave., e s, 25′ 8″ n Eighty-seventh St., 3 five-st'y brick tenements, tin roofs: cost, each, $20,000; owners and builders, Clark & Nason, 305 East Eighty-first St.; architect, G. A. Schellenger.

Essex St., No. 39, six-st'y brick tenement and store, tin roof; cost, $22,000; owner, Bertha Solomon, 2 Baxter St.; architect, Wm. Graul.

Seventy-eighth St., n s, 100′ e Second Ave., five-st'y brick tenement, tin roof; cost, $15,000; owner, Edward Ward, 228 East Fifth St.; architect, J. Kastner.

Robbins Ave., n w cor. One Hundred and Forty-ninth St., three-st'y frame dwell., tin roof; cost, $5,000; owner, Wm. Miller, on premises; architect, A. Arctander.

Vanderbilt Ave., e s, 150′ n One Hundred and Seventy-first St., 3 two-st'y frame dwells., tin roofs; cost, each, $2,000; owner, Susan M. Jones, Huntington, N. Y.; architect and builder, John Knox.

ALTERATIONS.— *Pearl St., No.* 480, six-st'y brick extension on side, tin roof; cost, $10,000; owner and architect, Thos. R. Jackson, 61 Broadway.

Kingsbridge Road, near One Hundred and Seventy-fifth St., repair damage by fire; cost, $4,500; owner, Isaac P. Martin, Ft. Washington; builder, Elward Smith.

Third Ave., s w cor. One Hundred and Fifty-fourth St., raise three stories, new store front, iron posts and columns; cost, $3,000; owner, Pauline D. Walker, 8 West Thirty-sixth St.

East Broadway, No. 65, front and interior alterations; cost, $3,500; owner, Bertha Solomon, 2 Baxter St.; architect, W. Graul.

Attorney St., No. 28, three-st'y brick extension to pastor's residence, tin roof; also remove gallery in church and put in large window, etc.; cost, $8,000; owner, Church of St. Mary, Rev. Nicholas Hughes, pastor, 28 Attorney St.; architect, L. J. O'Connor.

West Forty-sixth St., No. 466, five-st'y brick extension, tin roof; cost, $6,000; owner, John Ritter, 115 Greenwich Ave.; architect, Wm. Graul.

East Eighth St., No. 135, repair damage by fire, and a one-st'y brick extension on front; cost, $3,400; owner, Lydia Fox, 3 East Fifty-fourth St.; builder, P. Roberts.

Philadelphia.

BUILDING PERMITS. — *Green Lane*, bet. Mitchell St. and Ridge Ave., two-st'y brick building, 14′ x 34′; Howard Tocunh, contractor.

Cumberland St., bet. Amber and Coral Sts., one-st'y boiler and engine-house, 14′ x 38′; Wm. C. Haddock, contractor.

St. Louis.

BUILDING PERMITS. — Seventeen permits have been issued since our last report, three of which are for

unimportant frame houses. Of the rest those worth $2,500 and over are as follows: —

Ernst Neuer, frame dwell.; cost, $6,000.

Merchants' Elevator Co., frame elevator; cost, $85,000; Wm. E. Bent, contractor.

Third Baptist Congregational Church, one-and-two-st'y brick church; cost, $41,000; I. S. Taylor, architect; Henry E. Roach, contractor.

Anheuser Busch Brew. Co., one-st'y brick blacksmith shop; cost, $3,500; E. Jungenfeld, architect; sub-let.

W. H. Simpkin, two-st'y brick dwell.; cost, $3,600; B. W. Proetz, contractor.

G. H. Shriner, one-st'y double tenement; cost, $2,500.

F. C. Bonsack, two-st'y brick carpenter-shop; cost, $3,500; F. C. Bonsack, contractor.

J. M. Green, three-st'y stores and offices; cost, $3,000; sub-let.

Henry Minges, two-st'y brick dwell.; cost, $3,000; A. Beinke & Co., architects; Phil Riechers, contractor.

J. A. Fanning, 2 adjacent two-st'y dwells.; cost, $5,000; sub-let.

J. P. Fairley, 7 adjacent two-st'y dwells.; cost, $20,000; sub-let.

St. Paul, Minn.

Building Permits.— To be built on the cor. of Nina and Laurel Ave., 2 double houses; cost, $20,000 each, Mr. C. Riley.

House for C. Riley; cost, $6,000; A. M. Radcliff, architect.

Minnesota Club-House, cor. of Fourth and Cedar Sts.; cost, $30,000; Chas. T. Mould, architect.

Two-st'y frame double dwell. on Burr St.; cost, $4,800; owner, G. W. Dieter.

Two-st'y frame double dwell. on Burr St.; cost, $4,800; W. A. Miller, owner.

Two-st'y frame double dwell., s s of Grove St.; cost, $6,000; owner, Mrs. C. A. Finchout.

One-st'y roller rink, East Seventh St.; cost, $2,500; owner, Mr. Geo. Leonard.

General Notes.

Carthage, N. Y. — Frame dwell.; cost, $4,000; C. P. Ryther, owner; Johnston & Buell, architects, of Ogdensburg, N. Y.

Cornwall, Ont. — Four brick stores and offices; cost, $19,000; J. G. Snetzinger, owner; Johnston & Buell, architects, of Ogdensburg, N. Y.

Dunkirk, N. Y. — House for H. G. Brooks, of the Brooks Locomotive Works; cost, $35,000; R. A. Bethune, architect.

Fergus Falls, Minn. — An armory association is about to be formed in the city by Company F, with a capital stock of $10,000. The object of the plan is that the company can purchase suitable grounds and erect an armory for their exclusive use.

Iroquois, Ont. — Stone dwell.; cost, $20,000; M. F. Beach, owner; Johnston & Buell, architects, of Ogdensburg, N. Y.

Kansas City, Mo.—D. C. Strawbridge, a $5,500 brick block for residences, at 900, 902, 904 and 906 Tracy Ave.

John A. Patton, three $900 frame residences, at 549, 551 and 553 Lydia Ave., and two $700 frame residences at 555 and and 557 Lydia Ave.

J. E. Raber, $3,500 brick residence at 1514 McGee St.

Mr. G. Nelson intends building a five-st'y brick building at the s e cor. of Missouri Ave. and Main St.

Marshfield, Mass. — By the provisions of the will of the late Seth Ventress of Marshfield, $10,000 has been given to Luther Hatch, in trust, to be used in building an edifice to be known as the Ventress Memorial Hall. The town is to have the use of the same for a public library and other town purposes.

Newton, Mass. —Plans have been adopted by the Building Committee of the Newton Baptist Church, and a contract made with Mr. Norcross for the erection on Church St., Ward 1, of a stone church, to cost, with the land about it, about $70,000. The architect is to be Mr. H. H. Richardson of Brookline, and the style of the structure is to be Romanesque. The audience-room will accommodate 650 persons, and the arrangements are to be of a new and excellent nature.

Norwood, N. Y.—Brick school; cost, $12,500; School Board, owner; Johnston & Buell, architects, of Ogdensburg, N. Y.

Pleasant Plains, Staten Island, N. Y.— Ground is about to be broken for a new parsonage for Father Drumgoold and for a new building for the sisters in charge of the Mount Lorette Mission. Both buildings will be near the Mission.

Prescott, Ont. — Stone dwell.; cost, $5,000; S. S. Smades, owner; Johnston & Buell, architects, of Ogdensburg, N. Y.

Renfrew, Ont. — Stone dwell.; cost, $15,000; A. A. Wright, owner; Johnston & Buell, architects, of Ogdensburg, N. Y.

Rochester, N. Y.—A company has been formed here for the purpose of building and conducting a crematorium. Its members are James H. Kelly, Frank S. Upton, Matt Cartwright, Hamlet S. Briggs, A. W. Mudge and Rowland Milliman. The capital stock is $10,000. The building will be erected immediately on a plot of ground near Mt. Hope Cemetery, to be leased from the city.

COMPETITION.

City-Hall.

[At Richmond, Va.]

February 16, 1885.

Proposals are invited **until June 1st, 1885**, for furnishing designs for a city-hall upon which premiums will be paid as follows: —

For first best design, $700.

For second best design, $300.

The Committee on Grounds and Buildings of the City Council reserves the right to reject any and all designs.

For information address the undersigned.

487 W. E. CUTSHAW, City Engineer.

PROPOSALS.

Metal-Work.

[At Key West, Fla.]

Office of the Light-House Board,
Washington, D. C., February 25, 1885.

Sealed proposals will be received at this office **until 2 o'clock**, P. M., **of Wednesday the 11th day of March, 1885**, for furnishing the materials and labor of all kinds necessary for the completion, and delivery in the custom-house yard at Key West, Fla., of the metal-work of the Rebecca Shoal Light-House.

Plans, specifications, forms of proposals and other information, may be obtained on application to this office.

The right is reserved to reject any or all bids, and to waive any defects. STEPHEN C. ROWAN,

480 Vice-Admiral U. S. Navy, Chairman.

Granite Wharf.

[At Charleston, S. C.]

Office of Supervising Architect,
Treasury Department,
Washington, D. C., February 24, 1885.

Sealed proposals will be received at this office **until 2** P. M., **on the 31st day of March, 1885**, for supplying the labor and material, and building complete the granite wharf on the custom-house lot at Charleston, S. C., in accordance with drawing and specification, copies of which and any additional information may be had on application at this office, or the office of the custodian.

Bids must be accompanied by a certified check, for $1,000, drawn to the order of the Secretary of the Treasury as a guarantee that the bidder will enter into a contract, if his bid is accepted, and furnish a bond equal to the amount of the contract.

Bids received after the time of opening will not be considered. M. E. BELL,

480 Supervising Architect.

Court-House.

[At Grafton, Dak. T.]

Grafton, Walsh Co., D. T., February 5, 1885.

Sealed tenders, endorsed "Tenders for Court-House," will be received at the office of the undersigned **up to 3 o'clock**, P. M., **on Monday, March 9th, 1885**, for the erection and completion of a court-house in the city of Grafton, County of Walsh, Territory of Dakota.

Each tender must be accompanied by a certified bank check for five hundred dollars, to be forfeited in the event of the party to whom the contract is awarded declining to sign said contract.

The contractor will be required to furnish good and sufficient bonds for the completion of the building according to plans and specifications.

Plans and specifications may be seen at the office of the undersigned, or at the office of the architect, F. G. Corser, 402 Nicollet Ave., Minneapolis.

479 E. O. FAULKNER, County Auditor.

Iron Beacon Tower.

[Delaware Breakwater.]

Office of the Engineer,
Fourth Light-House District,
Post-Office Building,
Philadelphia, Pa., February 25, 1885.

Sealed proposals will be received at this office **until 2 o'clock**, P. M., **on Friday, the 13th day of March, 1885**, from iron manufacturers only, for the construction of the iron-work of a tower for a beacon-light at Delaware Breakwater.

The tower will be formed of cast-iron plates bolted together, and will weigh about fifty tons.

Plans, specifications, forms of proposal and other information may be obtained on application to the office of the Light-House Board, Washington, D. C.

The right is reserved to reject any or all bids, and to waive any defects.

HENRY M. ROBERT,
Lieut.-Col. U. S. A.,
479 Engineer Fourth Light-House District.

City-Hall.

[At Grand Rapids, Mich.]

The Board of Public Works, of Grand Rapids, Mich., invite sealed proposals **until March 19, 1885, at 7 o'clock**, P. M., for furnishing the entire material and labor for building a city-hall. Drawings, specifications and instructions to bidders, together with printed forms and schedules, can be seen at the office of said Board. Each bidder shall deposit with his proposal a certified check (payable to the order of the undersigned) for one thousand dollars to be forfeited to the City of Grand Rapids, in case he shall fail to execute a contract and bond satisfactory to the Board, should his proposal be accepted.

The Board reserve the right to reject any or all bids.

The building is to be a *first-class fire-proof structure*, in size about 100′ x 160′; the exterior to be of rock-faced stone backed with brick.

GEO. W. THAYER,
480 President of Board of Public Works.

Cathedral.

[At Peoria, Ill.]

Peoria, Ill., February 15, 1885.

Sealed proposals will be received by the undersigned **on or before 10 o'clock**, A. M., **Saturday, March 14, 1885**, for the erection of a R. C. Cathedral at Peoria, Ill., according to plans and specifications which can be seen with all necessary information by applying to the Rev. B. J. Spalding or C. Mehler, architect, 118 North Adams St., Peoria, Ill.

A certified check or a certificate of deposit for one thousand ($1,000) dollars, payable at any bank in Peoria to the order of the Rev. B. J. Spalding, must be inclosed with each proposal as forfeit for failure to sign contract and furnish satisfactory bond. Said check or certificate will be returned to all whose proposals are rejected, and to the one whose proposal is accepted after he has signed contract and furnished satisfactory bond. The undersigned reserve the right to withhold for five (5) days their decision in awarding the contract, and for explanations from bidders should proposals be not understood. Proposals to be addressed to the Rev. B. J. Spalding, Peoria, Ill., indorsed "Proposals for building Cathedral."

The right is reserved to reject any and all bids.

RT. REV. J. L. SPALDING,
480 REV. B. J. SPALDING.

Water-Works.

[At Paolo, Kans.]

Sealed bids will be received by the City Council of the City of Paolo, Kans., **on April 1, 1885**, for the construction of water-works in this city. Specifications and descriptions furnished on application to the Clerk of said city. 479

Breakwater.

[At Black Rock Harbor, Conn.]

Engineer Office, U. S. Army,
11 Insurance Building,
New Haven, Conn., February 4, 1885.

Sealed proposals for constructing a breakwater at Black Rock Harbor, Conn., will be received at this office **until 10 o'clock**. A. M., **on Tuesday, March 10, 1885.**

Proposals must be made in triplicate. Specifications, blank forms and instructions to bidders may be had on application at this office.

WALTER McFARLAND,
480 Lt.-Col. of Engineers.

Wood Framing, Galvanized Iron-Work, Roof Covering, etc.

[At Frankfort, Ky.]

Office of Supervising Architect,
Treasury Department,
Washington, D. C., February 13, 1885.

Sealed proposals will be received at this office **until 2** P. M., **on the 6th day of March, 1885**, for furnishing and fixing in place complete, the wood roof framing, galvanized iron-work, roof covering, etc., for the court-house, post-office, etc., building at Frankfort, Ky., in accordance with drawings and specifications, copies of which and any additional information may be obtained on application at this office, or the office of the superintendent.

Bids must be accompanied by a certified check, for $300, and those received after the time of opening will not be considered. M. E. BELL,

479 Supervising Architect.

Brick, Cement, etc.

[At Philadelphia, Pa.]

Public Building, Penn Square.

Sealed proposals will be received at the Office of the Commissioners, in the building, **until 12 o'clock, noon, of Tuesday, March 3, 1885**, for all the bricks, cement and coal required during the present year.

Blank forms, with envelopes can be had on application at the office of the architect in the building, second floor, south front.

The Commissioners reserve the right to reject any or all bids.

By order of the Commissioners.

SAMUEL C. PERKINS, President.

Attest: WM. B. LAND, Secretary. 479

Painting, Polishing and Glazing.

[At Kansas City, Mo.]

Office of Supervising Architect,
Treasury Department,
Washington, D. C., February 10, 1885.

Sealed proposals will be received at this office **until 2** P. M., **on the 10th day of March, 1885**, for all the painting, polishing and glazing required for the custom-house, etc., building at Kansas City, Mo., in accordance with specification, copies of which and any additional information may be had on application at this office, or the office of the superintendent.

Bids must be accompanied by a certified check, and those received after the time of opening will not be considered. M. E. BELL,

479 Supervising Architect.

Court-House Alterations.

[At Preston, Minn.]

Preston, January 9, 1885.

The County Commissioners of the County of Fillmore, in the State of Minnesota, will receive sealed proposals **until the 25th day of March, 1885, at 12 o'clock**, M., at the office of the county auditor, in the village of Preston, said county, for the remodeling of the county court-house in said village, and the building of 2 two-st'y brick additions thereto, and iron vaults therein, and the furnishing all materials, in accordance with the plans and specifications therefor on file in the office of said auditor, which can also be seen at the office of Mayberry & Son, architects, Winona, Minnesota.

No bids will be received except for the whole building complete as specified.

The successful bidder will be required to give a sufficient bond with sureties, within a reasonable time to be fixed by said commissioners, in the sum of $15,000, to be approved by said commissioners, conditioned upon the faithful performance of his contract.

Each bid must be accompanied by a sufficient bond with sureties, or a duly certified check payable to said county in a sum of at least five per cent of such bid, conditioned upon the giving the bond above specified within the time so fixed, provided such bid should be accepted. The work will cost several thousand dollars, and must be completed on or before the first day of November, 1885. Right reserved to reject any or all bids. J. G. MINER,

Chairman Board of County Commissioners.

Attest: G. A. Hayes, County Auditor.

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